

Measuring Political Party Ideologies – Combining Expert Scale and Text Based Approaches

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Abstract

The empirical measurement of party ideology, albeit its importance in comparative politics, is by far not as sophisticated as researchers would like it to be. The first part of this paper introduces and discusses current approaches used to measure ideological party positions, including party family classification, mass and expert surveys, hand coded and computerized text based approaches and behaviorist measures. The second part presents an alternative approach taking the multidimensional nature of political ideology into account, by rebuilding the 13 most important dimensions, extracted from expert surveys, with MRG categories. In contrast to the purely inductive standard principal component method, the resulting party positioning has the basic advantage of being based on substantially interpretable dimensions. Compared to the expert surveys, it can generate a continuous timeline of party positions with distinct values for every election. The last part of the paper gives an external validation of the proposed scale by trying to replicate the results of the combined approach for Germany, Sweden and the United Kingdom, using *wordscores*.

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1. Introduction - The need for adequate measures of party ideology

Research in comparative politics often has to deal with political parties. They are the backbone of any democratic system. Thus it is common to use them in empirical studies as explanatory variables. Doing this necessarily requires simplifications. Most authors regard parties as unitary actors albeit knowing that they are consisting of a multitude of different persons, with different views that often constitute intra-party factions. Nevertheless this clear simplification yields fruit in many circumstances and therefore is adopted in this paper as well.¹ Furthermore early research viewed the only stimulus for political parties in obtaining offices within parliament, cabinet, or on subordinate levels. Taking the example of coalition building theories, the office seeking approach is closely connected to the seminal work of von Neumann and Morgenstern (1953) who predicted the formation of minimal winning coalitions (MWC). Their theory and other related ones (Leiserson, 1968; Riker, 1965; Gamson, 1961) performed quite well in empirical tests, although their performance varies widely across states. For a number of countries MWC are clearly not the norm. For example Sweden, Norway and Denmark show a high record of minority cabinets whereas surplus coalitions are relatively common in Finland, Italy and the French IV. Republic (Strom, 1990; Laver und Schofield, 1990).² Mere office seeking approaches are not able to explain this pattern. Therefore the attention shifted towards the policy orientation of political parties. Axelrod (1970) introduced the connectedness criterion into minimal winning theory, De Swaan (1973) predicted governments ruled by the median legislator party, and Schofield (1993) stressed the importance of a stable core party for cabinet formation as well as termination. These approaches were all 'institutional-blind', meaning that they assume no boundary for policy positions. Scholars criticizing this 'blindness' view institutions on the contrary as restricting the space for alternative policies. The portfolio allocation model by Laver and Shepsle (1990; 1994; 1996) is probably the most influential of these institution-focused, policy-oriented theories.

Regardless whether institutions are taken into account, today's theories altogether view parties' policy positions as important components in explaining cabinet formation and termination, coalition behavior as well as policy outcomes (Warwick, 1994; Woldendorp et

¹ Laver and Schofield (1990, p.28) show that, when it comes to government formation, parties in most instances can be regarded to behave as unitary actors. According to Laver and Shepsle (1996, p.24-25) this reasoning holds as well for the breaking of governments. Nevertheless, more recently, intra-party politics and their influence on coalitions at the national as well as sub-national level has become a new and promising field of research, despite the fact that the measurement of cohesion or inner-party conflicts is a difficult task. For an excellent overview of intra-party politics compare the volume edited by Daniela Giannetti and Kenneth Benoit (2009).

² Table a1 in the annex shows the significant variation in cabinet types that can be found empirically.

al., 2000; Wagschal, 2005; Schmidt, 2007). The general problem with the inclusion of party policy is that, on the one side, there is a rich body of relatively comprehensive theories, mostly building on rational choice and spatial modeling that started with Hotelling (1929) and Downs (1957), but on the other side we lack empirical data for testing these theories adequately. As long as we are not able to close or at least reduce this gap we will be sailing around “between the *Scylla* of theoretical infertility and the *Charybdis* of empirical triviality” (van Deth, 2001, S.xviii [original emphasis]).

In accordance with the seating arrangements in parliaments, policy space was at first thought of as an one-dimensional left-right-scale (Castles und Mair, 1984). Yet individuals as well as parties do have distinct ideological positions on a number of policy dimensions. Within the theoretical debate it is a common place that in different countries, through different periods of time and within different parties different ideologies matter in different ways. When testing the influence of ideology, thought of in this more complex way, it is necessary to have measures accounting for these diverse ideological dimensions. Sticking to a simple left-right-scale undermines thorough tests of the party ideologies’ impact. Therefore this article presents a new possibility of accounting for the multidimensional nature of political ideology, by rebuilding the 13 most important dimensions on the national level³, extracted from expert surveys, with categories from the Manifesto Research Group (MRG). The resulting party positioning has the basic advantage of being based on substantially interpretable dimensions, in contrast to the purely inductive, standard principal component method. In addition it can generate a continuous timeline of party positions with distinct values for every election, which the expert surveys lack.

Before presenting the approach in the second part of the paper, an outline of the methods currently used for the identification of party ideology will be given. These include party family classification, mass and expert surveys as well as hand coded and computerized text based approaches and finally behavioral measures. The main conclusion drawn from their comparison reflects a basic problem of social sciences. In contrast to natural sciences, where entities can often be measured in a direct way (e.g. weight) and the quality of the measurement is thus solely dependent on the accuracy of the measuring instrument (scales),

³ Though the last years saw a number of articles using party policy positions for the analysis of phenomena on the sub-national level, for example for local and regional government formation (Bäck, 2008; Stefuriuc, 2009), the data availability constitutes a problem compared to the national level. Some of the methods presented in this paper can potentially or have already been successfully applied on the sub-national level: hand coding of regional party manifestos (Libbrecht et al., 2009) or the *wordscore* approach for parties’ positions in the German Länder (Bräuninger und Debus, 2008) others probably will not work that well. The sub-national level therefore definitely holds a huge potential for further research on ideological positioning of parties.

this is not the case with our measures.⁴ In social sciences the validity of the measurement heavily depends on the conceptual design of the measure. Ideological positions of political actors fit this pattern, as they are “typical social science concepts that cannot be measured directly. We perceive them indirectly, and our attempts to measure them depend on inferences” (Marks, 2007, p.2). Therefore, none of the presented measures can claim to be the only one mapping party ideology in a perfect way. A combined approach avoiding the individual problems of the single methods seems to be a more fruitful path that shall be followed in this paper. The last part of the paper contains a cross validation of the presented approach, trying to replicate the time line of ideological positions for Germany, Sweden and the United Kingdom using the *wordscore* method.

2. Hitherto used measures of party ideology

This paragraph depicts methods used so far in political science for the measurement of party ideology. It concentrates on party family classification, surveys, text based approaches and finally behavioral measures.

2.1 Party family classification

In public as in scientific discourse, parties generally are classified according to party families and also in their self perception these *familial connections* play an important role. The term party family thereby implies cross-temporal as well as cross-country similarities between parties that are believed to compose such an entity. Besides the heavy use of this instrument it is still “one of the most under-theorized and least-specified approaches to the general classification of parties” (Mair und Mudde, 1998, p.214). Different possibilities for party family classification can be identified:

2.1.1 Social and historical origin

According to Lipset and Rokkan, parties evolve from cleavages that arise out of the historical process (Lipset und Rokkan, 1967; Rokkan, 1970). Party families are thus groups of parties

⁴ Though in natural sciences there are also a number of quantities and especially physical constants that can only be measured indirectly, the big difference to social sciences is, that they can be described very accurately by mathematical formulas. For example the elementary charge can be measured via the oil-drop experiment (Millikan, 1913), where the vertical movement of a charged oil drop in between two capacitor plates is observed. The elementary charge can then be calculated by the acceleration of gravity, the voltage impressed on the capacitor, the distance between the plates and the density of the oil. Thus the validity of the indirect measure of the elementary charge is primarily dependent on the reliability of the direct measures of the single factors, composing the elementary charge. The possibility to specify a concept in a quantitative, deterministic way, very accurately, by mathematical formulas is therefore the major difference between natural sciences and social sciences. Real deterministic laws as we see them in physics or chemistry are not present in social sciences. Whenever scholars have tried to find them (cp. Rae, 1967, p.92; Levy, 1989, p.270), they were disproved in the end (Nohlen, 2007, p.440 f.; Karl und Teusch, 1998, p.248 f.; Layne, 1994, p.44 f.) Thus there will always be a higher degree of measuring inaccuracy in social sciences than for example in physics.

“that mobilized in similar historical circumstances or with the intention of representing similar interests” (Gallagher et al., 2001, p.202). This framework led to several, more or less similar, lists of party families (Beyme, 1984, p.36; Seiler, 1980). The basic problem with the original cleavage approach is that it assumes the party system not to alter again, when fully differentiated. According to Lipset and Rokkan this point was already reached around 1920 (1967, p.50). Mair and Mudde therefore critically state that an “approach that focuses exclusively on the origins of parties as the key to their contemporary classification risks neglecting more than it can offer” (1998, p.216). More recent studies reject the thesis of frozen party systems (Shamir, 1984) and are thus able to explain newly established parties by the conflicts that arise in certain historical circumstances out of society. Examples are the emergence of green parties as a reaction to the value change (Inglehart, 1977) and the established parties lack to pick up these issues in the 1970s and 80s, or the strengthening of right wing parties in the 1990s (Kitschelt und McGann, 1995; Ignazi, 1992). The social and historical origins of parties thus still bear a certain potential for party family classification, although a clear operationalization is difficult.

2.1.2 Affiliation with transnational federations

Already in the late 1980s an increasing trend “of political parties throughout the world to construct or join international organizations of like-minded formations” could be observed (Day, 1988, p.ix). These transnational federations that today exist on several geographic levels are a second possibility to classify party families. The ideological consistency within these federations is nevertheless extremely diverse. Relatively strong links exist in between federations on the level of supranational institutions, like the Nordic Council (Mair und Mudde, 1998, p.216). Especially the European Union, with party federations constituting ‘real European parties’ within the EU parliament, provides a good basis for research, even though not without its own problems. On the one hand not all parties are affiliated with transnational federations and on the other hand some parties even join several ideologically diverse party federations. For example the Austrian *ÖVP* and the Slovakian *KDH* were both members of the *Christian Democratic International* as well as of the *Conservative International Democratic Union*. In such a case an unambiguous party family classification is not possible (Mair und Mudde, 1998, p.217). Moreover, some parties show a quite high volatility in their membership within transnational federations. The Italian *Lega Nord* serves as a good example. In the European Parliament the party first joined the regionalist *Rainbow Coalition* (1989-1994), then switched to the *European Liberal Democrat and Reform Party* before it finally became a member of the right-wing, nationalist *Union for Europe of the*

Nations. Such frequent changes within the membership of transnational party federations, especially when they are not ideologically motivated, impede their use for the classification in party families. Therefore classifying according to transnational party federations works quite well for the major parties, especially in Europe, but has drawbacks for minor parties and in party systems beyond the scope of the EU parliament.

2.1.3 Party name

Possibly the simplest way to classify parties is using their name. The underlying assumption is that the ideological positions can best be located by the parties themselves, and the names they choose are an expression of their ideological stance. Klaus von Beyme used the party name as the primary criterion for his party family classification, although he emphasizes that it is often not possible only to stick to the name (1984, p.14). The problems of this approach are apparent: (1) It is unclear how to deal with parties changing their names – does a new name really mean a new ideological orientation?⁵ (2) Parties using quite similar names can nonetheless favor very distinct policies.⁶ (3) Some party names do not contain any information about the party's ideology.⁷

2.1.4 Ideological position

Peter Mair and Cas Mudde regard more sophisticated ideological scales as a last possibility to classify parties into party families (1998, p.217-220). This makes sense, when it is only the party families that are of interest. In this paper however classification into party families is seen as a simplified approach for obtaining ideological positions which makes it not expedient, when these ideological positions are already available, to move them without real need to a higher level of aggregation, probably losing information about systematic variation (Munck und Verkuilen, 2002, p.22).

2.1.5 Overall evaluation of party family classification

Classification into party families can thus be seen as a quite simple and comprehensible way for locating political parties within the ideological spectrum. Nevertheless it is an extremely rough measure that is not really able to generate the Downsian proximity space that is needed

⁵ Debatable examples are the *Partito Comunista Italiano* that became the *Partito Democratico della Sinistra* and the Swedish *Vänsterpartiet Kommunisterna* that dropped the name affix *communist* in 1990. For both parties the name change was part of a more general ideological swing to the right (Große und Trautmann, 1997, p.37 f.; Jahn, 2003, p.109), and thus the new name justifies a change in the party family classification. On the other hand the current German *Left Party (Die Linke)* that primarily is a successor of the *Party of Democratic Socialism*, despite the fact that it dropped the class struggle element of *socialism*, did not change its basic ideological stance. It should still be classified as a socialist party.

⁶ The center parties in Sweden and Finland are former agrarian parties (Auffermann, 2003, p.208; Jahn, 2003, p.107), whereas the Dutch *Centrumpartij* shows a right wing ideology (Lepszy, 2003, p.367).

⁷ This is especially the case when the “labels are strictly sui generis” (Mair und Mudde, 1998, p.221) as it is for example the case with *Fianna Fáil* or *Forza Italia*.

for most applications. One possibility to derive at least at a one-dimensional quasi-proximity space is to order the party families according to a certain scale (e.g. from left to right). Table 1 shows one possible classification scheme using the example of Germany. The scale ranges from communist and socialist parties (KPD/PDS) to right wing and nationalist ones (NPD/REP). When it comes to the calculation of ideological measures, regionalist parties like the *Bavarian Party* or other small parties that do not properly match into one of the main party families are allocated to the median group containing per se the liberal parties. This procedure shall minimize the bias resulting from the fact that not all parties have a clear stance on the left-right dimension.

Tabelle 1: Party family classification in Germany and ideological measures calculated on that basis

Party	Party family	Vote share 1953 %	Vote share 1998 %
KPD (Communist Party of Germany)	Communists/Socialists	2.2	-
PDS (Party of Democratic Socialism)	Communists/Socialists	-	5.1
SPD (Social Democratic Party of Germany)	Social democrats	28.8	40.9
Grüne (Greens)	Greens	-	6.7
FDP (Free Democratic Party)	Liberals	9.5	6.2
BP (Bavarian Party)	Regionalistic	1.7	0.1
GB/BHE (All-German Bloc/ League of Expellees and deprived of rights)	Others	5.9	-
Other small parties	Others	3.5	3.8
CDU (Christian Democratic Union)	Christian center	36.4	28.4
CSU (Christian Social Union of Bavaria)	Christian center	8.7	6.7
DP (German Party)	Conservatives	3.3	-
NPD (National Party of Germany)	Right wing/Nationalists	-	0.3
REP (Republicans)	Right wing/Nationalists	-	1.8
	Polarization	2.2 %	7.2 %
	Ordinal disagreement	0.85	1.38
	Ideological standard deviation	1.39	1.56

The Polarization value is calculated as the sum of vote shares of Communist/Socialists and Right wing/Nationalist parties. The ordinal disagreement and ideological standard deviation measure the ideological heterogeneity of the party spectrum. For both measures a value of zero would indicate a party system where all parties fall into just one party family. High values on the other hand stand for a system containing a number of parties in distinct party families holding diverse policy positions.

Party family classification enables scholars to calculate simple ideological measures as polarization⁸, ordinal disagreement, and when additionally a certain distance between two consecutive party families is assumed (e.g. equidistance), metric measures as the ideological standard deviation are possible as well (Taylor und Herman, 1971; Jäckle, 2009). The big advantage of this method, in contrast to the more accurate ones described in the following paragraphs, is that it enables researchers to do their own ideological classification for exactly

⁸ Polarization values can easily be calculated as the share of parties that are coded as belonging to either the communist or the right wing, nationalist party family. This approach neglects other extremist parties, as for example the Portuguese *Partido Popular Monárquico* or religiously fundamentalist formations (Hurwitz, 1971, p.52 f.), nonetheless communists and fascists/right wing nationalists definitely make up the biggest share of extremist parties (Sartori, 1976, p.132 f.).

the countries and parties they need for their work. They are thus independent of incomplete time series and datasets that do not list all relevant parties. Furthermore this method can be seen as a kind of benchmark for cross-validating results arrived at with more sophisticated ideological measures.

2.2 Surveys

A second possibility to assess where political parties stand in terms of specific policy questions is to ‘ask around’. According to the kind of sample that has to answer the questions, expert surveys and public polls can be distinguished.

2.2.1 Expert Surveys

In the 1970s expert surveys on party positions were carried out on a mere ad hoc basis by scholars that needed information about party ideology for their own studies (De Swaan, 1973; Taylor und Laver, 1973; Dodd, 1976). Castles and Mair were the first to generate a broader dataset with transitive classifications of party ideology that should build the basis for better comparative research (Castles und Mair, 1984). In the following years their single left-right scale became one of the most used datasets in comparative politics. As the general advantage of expert surveys it is often mentioned that, when constructed adequately, they constitute an instrument to measure party ideology very comprehensively. This is because they are able to measure or at least approximate some key parameters that cannot be determined via hard data (Laver und Hunt, 1992, p.34). The only factors limiting their applicability are the availability of country experts and the quite high costs. With a rising number of experts per country the reliability of the ideology ratings improves. Outliers can be identified and their bias reduced via the calculation of average scores. Moreover averaging transforms the integer ordinal scales – seven points at Ray (1999), ten points at Castles/Mair (1984) and Huber/Inglehart (1995) and 20 points at Laver/Hunt (1992) and Benoit/Laver (2006) – into quasi-interval scales that are needed for example for variance-based measures. Several points have to be kept in mind when conducting an expert survey:

(1) The underlying scale should be a “proximity space”, where the distances between parties can be interpreted as ideological differences and not a “directional space”, where the distances represent the strength of approval for a policy (Ray, 2007, p.15).

(2) The level of investigation must be clear which means experts must know whether they should estimate the position of the party's voters, of its basis or of its leaders (Budge, 2000, p.103).⁹

(3) For reliable estimations the scales should not be too general. Especially the often used, very general left-right dimension seems to be problematic in this regard. It was shown that experts, particularly when viewed in cross-country comparison, use very divergent criteria for locating parties on this scale (Huber und Inglehart, 1995; Benoit und Laver, 2007b). Ian Budge therefore rightfully asks whether a mean ideological position derived from such a scale does not rely on “averaging bananas and oranges in policy terms” (Budge, 2000, p.105).

Budge proposes another critique that shows his basically different focus on the point. He argues that the development of the questionnaire often requires the erection of quite hypothetical contrasts which the parties themselves mostly try to avoid in their statements. For example no party would present itself as a tax-increase-party (Laver und Garry, 2000, p.625) which makes the expert rating on a scale *taxes vs. spending* in his eyes relatively arbitrary as the parties would not locate themselves on that scale. More generally Budge distinguishes between two kinds of party positions: the one, a party advances in its external communication and manifesto and the one, it exhibits in its policy decisions. Only the first one offers the possibility to explain party behavior in a non-tautological way (2000, p.108 f.). From this point of view a text based approach seems favorable, but this is clearly a matter of the research question. For a number of studies it is much more important to know where a party really stands in terms of ideology than to know what policy it promotes through its communications.

2.2.2 Public polls

Some scholars explicitly ask non-experts to locate parties on ideological scales (van der Eijk und Franklin, 1991; van der Eijk und Oppenhuis, 1991). In these studies it is the perception of the citizens/voters that indicates the parties' ideological position. The representative sample thereby allows the calculation of standard errors and confidence intervals that can be used to improve the reliability of the measure. As such surveys are conducted in most democratic countries on a more or less regular basis anyway, the costs for this approach are fairly reasonable. Peter Mair regards public polls as “one of the principal and most robust means of charting party and/or voter positions” (Mair, 2001, p.14). The problems are nonetheless obvious:

⁹ Moreover it has to be made clear on which sources the experts shall base their judgments (Ray, 2007, p.15).

(1) It is unclear to what extent the citizens assign their own ideological preferences to their favorite parties.¹⁰

(2) In public polls it is not possible to distinguish exactly between the levels of investigation – lay respondents would be overstrained when they had to declare whether their estimation refers to the party basis or party leaders.

(3) It is dubious whether the citizens' perception can be transferred one to one into party positions – the approach ignores all influences of intermediate institutions and organizations (media, NGOs) with their undoubtedly strong impact on the citizens' perception.

2.2.3 Overall evaluation of survey approaches

Despite expert surveys can generally be regarded as valid measures for party ideology, their infrequent conduction does not provide enough information about shifts of party policies through time. Public polls do not face such practical restrictions as they are carried out anyway on a regular basis, enabling researchers to analyze shifts through time. Their basic problem is that it is unclear to what extent the lay perception corresponds with the party's real ideological position.

2.3 Text based approaches

“Democracy is about communication and the way we communicate is principally through the written word. [...] Texts therefore are the major source of evidence we have for how democracy functions.” (Budge und Bara, 2001, p.3)

According to this quotation a further possibility to locate parties on ideological scales is to examine their external communications. Equating party and election programs with active statements of will of the parties allows for a much more direct way of measuring party ideology than other approaches (Budge und Pennings, 2007a, p.121). The question is how to extract ideological positions out of these texts. Two possibilities exist: hand-coded and computer-based approaches.

2.3.1 Hand-coded approaches – the Manifesto Research Group

The most widespread text-based approach is the *Comparative Manifesto Project* conducted by the *Manifesto Research Group* (MRG).¹¹ It is based on a qualitative content analysis of

¹⁰ One possibility to control for this bias would be to ask the respondents additionally about their own political positions and the parties they favor for thereby checking on potential intercorrelations.

¹¹ Another hand-coded approach is the *Party Change Project* (Janda et al., 1995) where the coders rate whole texts according to 19 a priori specified dimensions and are thus awarded a relatively high importance which gives the measure more the semblance of a highly structured expert survey than of a mere text based approach.

the electoral programs. Every election program is broken up into quasi-sentences, each containing a certain idea or meaning (Klingemann et al., 2006, p.xxiii). The human coders classify these quasi-sentences into a set of more than 50 policy categories.¹² The theoretical basis of the MRG approach lies within the salience-theory developed by Budge and Farlie (1983). According to them election campaigns and their written manifestations – the election programs – do not follow the classical conception of a political debate, where one party presents its policy ideas and the others take up a stance on these issues, criticizing the first party's position (cp. Bryce, 1923, p.127). Quite to the contrary, political parties try to ignore the details of the opponents conception as much as possible for advancing their own preferred issues, “so that reading different party statements made in the course of the same campaign fosters the illusion that several quite separate elections are taking place!” (Budge und Farlie, 1983, p.23). Salience theory therefore understands competition among parties in terms of the distinct emphases the parties place on certain policy fields. Actually this means a renunciation from the Downsian proximity space (Ray, 2007, p.16) as differences between policies exist here only as different accentuations of policy fields (Budge, 2001, p.82). How far this kind of data is suited to extract ideological positions of parties is a highly controversial question within political science. One side argues that two parties could have very distinct ideological positions according to a policy, but they can as well attribute the same salience to this policy, meaning the same quantity of quasi sentences falls into the respective category (Laver und Garry, 2000, p.620). Other scholars recognize the MRG-data as a good ways to locate parties on ideological scales (Baron, 1991; Schofield, 1993; Warwick, 1994).

But how can the more than 50 MRG categories, that indicate for example how strong a party program favors the EU, be transformed into ideological positions? For the EU example there is a dichotomous structure with one pro- and one anti-EU category. Therefore it is possible to treat them separately, resulting in one pro- and one anti-EU dimension (Marks et al., 2007), or to combine both values into a single EU-dimension, either additively (Corruba, 2001) or via a ratio scale (Wessels, 1995; Ray, 1999). Generally the ratio scale seems to be the better choice as it would certify a party that has 30 pro-EU and 20 anti-EU quasi sentences a more ambiguous stance than a party that has solely 10 pro-EU quasi sentences. The additive scale could not differentiate between these constellations (Benoit und Laver, 2007b, p.96; Ray, 2007, p.16). Other simple dimensions can be calculated accordingly. For more complex

Paddock on the other hand cuts texts in smaller units and lets his coders evaluate these single paragraphs in terms of ideology (Paddock, 1998).

¹² In the 2001 study there were 54 categories, the 2006 study includes two more (Budge und Bara, 2001, p.4; Klingemann et al., 2006).

dimensions as ‘left-right’ that are not covered by a simple dichotomous pair, several MRG categories have to be combined into one scale. This is mostly done on an inductive way via principal component analysis (Budge und Klingemann, 2001, p.22 ff.).

Critics of the MRG-approach often mention as a major drawback the impossibility to calculate confidence intervals for the ideological positions. In their view this leads to a much too uncritical adoption of the MRG-data especially when used as a “gold-standard” for the evaluation of other measures (Benoit und Laver, 2007a, p.130). According to this critique the MRG-theorists point to the possibility of a certain test-retest method – the Heise reliability measure (Heise, 1969) – that can be applied on the MRG-data (Budge und Pennings, 2007b, p.138; McDonald und Mendes, 2001) and further methods of testing its reliability, e.g. multiple coding by different coders or split half reliability (Klingemann et al., 2006, p.88-92).

2.3.2 Computer-based approaches

Computer-based approaches no longer build on qualitative content analysis conducted by human coders, but use data processing for quantitative content analysis. Put differently, these approaches basically count words (or text fragments) in an automated way. Two distinct versions can be distinguished, both introduced by Laver, Garry and the second one also by Benoit (2000; 2003):

- (1) Using a coding ‘dictionary’ of words (phrases) that have unambiguous meanings in party programs; only the words included in this dictionary are counted.
- (2) Using the *wordscore* approach that regards texts not as discourses, but rather as a frequency distribution of words.

The first method basically generates a different number of words falling into the single coding categories. This frequency has to be transferred into ideological positions. Again purely inductive factor analysis has been applied for this task (Gabel und Huber, 2000), but Laver and Garry criticize this method for its policy-blindness leaving the resulting dimension without any substantial content. Instead they argue to use a multidimensional policy space with the single dimensions being conceptually well grounded (Laver und Garry, 2000, p.628). This paper adopts their view and uses later on a similar method. In comparison with the mere hand coding, the dictionary approach already reduces the manpower needed to arrive at ideological party positions, but still a big proportion of expert knowledge is necessary to decide which words (phrases) should be included into the coding dictionary. The second approach is in this regard even more efficient and thus preferable in terms of costs.

The *wordscore* approach counts **all** words resulting in a complete frequency distribution of a text. To derive at ideological positions, these distributions are compared with reference texts that are normally other party programs of the same party. For these reference texts the ideological position must be known a priori.¹³ Three steps are necessary to calculate ideological positions with the *wordscore* approach (Laver et al., 2003, p.315 ff.):

(1) From the relative frequency F_{wr} of every single word w in a reference text r and the number of reference texts R the probability of reading text r when reading only word w can be calculated:

$$P_{wr} = \frac{F_{wr}}{\sum_r^R F_{wr}} \quad [1.1]$$

(2) Together with the a priori known policy positions of the reference texts A_{rd} on dimension d , a single word's expected policy position on this dimension (S_{wd}) for all other texts can be calculated:

$$S_{wd} = \sum_r^R (P_{wr} \cdot A_{rd}) \quad [1.2]$$

(3) In the last step the expected policy positions of the single words and the relative frequency distribution of these words within the text that shall be analyzed (F_{wa}) are combined into the final score S_{ad} which is the expected policy position of text a on dimension d :

$$S_{ad} = \sum_w^W (F_{wa} \cdot S_{wd}), \quad [1.3]$$

with W = total number of words.

The *wordscore* approach thus produces expected policy positions that generally can be interpreted as the original scores that have been included as references. However, because of the huge number of relatively neutral words, the variation within the positioning of the analyzed texts is always smaller than for the reference texts. Thus a direct comparison between reference positions and analyzed positions is not possible unless the expected

¹³ Recently an approach was presented called *wordfish* that is able to estimate policy positions of parties out of their manifestos without the need for a reference category and thus without the need to have any information about policy positions for a certain party to a certain point in time beforehand. It assumes a Poisson distribution for all word frequencies. This assumption, together with fixed effects for parties (controlling for the lengths of a manifesto) and words (controlling for frequent words in all manifestos that are without ideological content, like 'the' or 'and') makes it possible to calculate "word specific weight[s] capturing the importance of a word j in discriminating between party positions" as well as estimates of parties' ideological positions (Slapin und Proksch, 2008, p.709; Proksch und Slapin, 2009).

positions are standardized according to the original reference scale.¹⁴ A comparison between several calculated expected positions is nonetheless possible without transformation. A problem of the method is for sure that the ideological positions derived at, can only be interpreted according to the reference texts. Thus cross-country as well as, to a somewhat lesser extent, inter-temporal comparisons pose serious problems.¹⁵ A further point of critique coming from the MRG-theorists – the alleged drastic flattening out of policy movements (Budge und Pennings, 2007a, p.128) – can be attributed to a misguided use of *wordscore* method with regard to the reference texts. This lucidly illustrates the core importance of a proper identification of suited reference texts and their assumed policy positions. Because otherwise, like the example of Budge and Pennings demonstrates, one of the most basic principles of data analysis shows up again: “garbage in – garbage out” (Laver et al., 2003, p.330).¹⁶

2.4 Behaviorist approaches

A last possible method for the location of party positions on ideological scales is to use the parties’ behavior as a proxy for their ideological positions. Different ways of operationalization can be thought of: (1) the already mentioned memberships in transnational party federations can give a first, basic impression; (2) the analysis of parliamentary voting outcomes is another possibility. For this it is nevertheless necessary to have recorded votes for all members of the parliament. However, with the exception of the United States where a significant proportion of bills is decided on by roll call votes (Poole und Rosenthal, 1997; MacRae, 1958) and the European parliament where also some studies used such information (Attina, 1990; Hix et al., 2006), these data are not available for most other countries in a sufficient quantity, leaving it no real alternative to the other measures of party ideology.

¹⁴ For a discussion about the adequate mathematical form of this standardization compare Laver et al. (2003, p.316), Martin and Vanberg (Martin und Vanberg, 2008a; b), Benoit and Laver (2008) and finally Lowe (2008) who regards both proposed standardizations as deficient.

¹⁵ The major problem for inter-temporal comparisons rests with the changing meaning of words across times. Therefore only limited time spans where political communication uses the same words with the same meanings are able to generate valid time series of ideological positions. Budge and Pennings therefore conclude that the *wordscore* approach is not yet able to compete with the MRG-approach as it cannot generate a valid time series of ideological party positions (2007a).

¹⁶ Here again the convenience of the *wordfish* approach becomes evident, as it circumvents the necessity to choose proper reference texts and to assign fitting policy positions. On the other hand it does not discriminate between policy dimensions as *wordscores*, at least in theory, does. Thus to derive at policy positions on diverse ideological dimensions, the manifestos have to be partitioned on theoretical grounds according to passages that deal with a certain policy field. For their examples Slapin and Proksch (2008, p.712) followed a scheme developed for Germany distinguishing between economic policy, societal policy, foreign policy and the left-right dimension (König et al., 2003). The *wordfish* software then runs only on these segments of the manifestos. This of course means again a lot of intense, qualitative preoccupation with the content of the texts, undermining the basic advantage of computerized approaches – not to mention the big influence that the scheme for dividing the different policy-specific sections has on the resulting estimates.

Based on the previous discussion especially expert surveys and the hand coded MRG-approach can be seen as a feasible ways to locate parties on diverse ideological dimensions in terms of the Downsian proximity space. Regarding their validity there is a highly controversial debate going on.¹⁷ However cross-validations between the different approaches show that there is (at least for the left-right and the European integration dimension) a surprisingly high consistency in between their ratings (Marks et al., 2007, p.25; Volkens, 2007, p.109). Therefore this paper explicitly regards both approaches as generating meaningful information about the ideological positioning of parties with the basic advantage of the MRG-method to provide for more variable time-series. The following paragraph depicts a new way for locating parties within a multidimensional policy space, combining the Laver/Hunt and Benoit/Laver scales with the MRG-approach. The *wordscore* approach will then be used to crosscheck the resulting time lines.

3. A combined approach

The Laver/Hunt and Benoit/Laver surveys do not only ask the experts to locate the parties' policy positions on a number of ideological dimensions (between 8 and 14 per country) but also for how important/salient they think the party leaders regard these dimensions. For obtaining country-wide salience values for each dimension, the authors aggregate the parties' salience values weighted by the vote share of the last parliamentary election. These weighted means thus indicate the average relevance of a policy dimension within a certain country around 1990 (Laver/Hunt) and 2004 (Benoit/Laver) respectively.¹⁸ According to these values the three most important dimensions per country are taken from both studies separately. The result is a number of policy-dimensions that show up to be of relevance in most countries (e.g. *welfare vs. taxes*) and some dimensions that are clearly country-specific (e.g. *Quebec* in Canada or *Northern Ireland* in Ireland). By this means a total of 25 ideological dimensions being of increased relevance, at least in some countries, can be identified among the whole sample. They are listed in table a2 in the annex together with the exact questions used in the expert surveys. The 25 dimensions serve as the basic population of potentially relevant policy dimensions. Yet the expert surveys only generate snapshots of the policy space at distinct points of time. They cannot account for changing policy positions and for differences in the dimension salience through time.

¹⁷ For a good overview compare the special issue of the Electoral Studies Vol. 26, No. 1 (2007), especially the article by Volkens (2007).

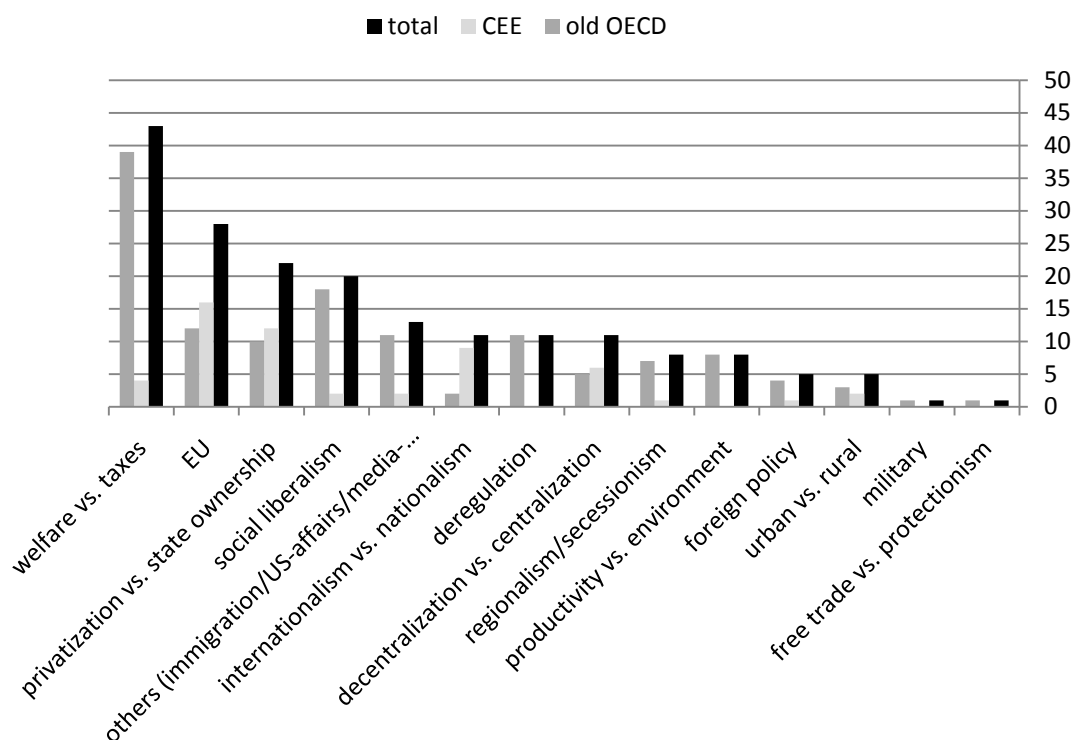
¹⁸ Tables of these values – additionally standardized for an easier interpretation (values > 1 indicate an above-average salience) – can be found in both studies (Laver und Hunt, 1992, p.50; Benoit und Laver, 2006, p.107-109).

To overcome this limitation it was tried to replicate the 25 dimensions with the use of the available MRG-categories. This task was successful, although not every expert based dimension could be replicated by manifesto data. Table a2 in the annex illustrates this procedure: The first twelve dimensions were reproduced more or less ‘one-to-one’ by the MRG-data, the following five were combined into a single ‘Europe-dimension’, the next five were absorbed by one of the foregoing dimensions and only for the last three dimensions no dependent could be found in the manifesto data. Figure 1 provides a first insight into their relative importance based on the frequency of each of the 13 dimensions being amongst the three most salient dimensions within the Laver/Hunt and Benoit/Laver surveys. The graphs are split according to *old* OECD and CEE countries, with the latter having been only included in the 2006 survey. Significant differences between the two groups can be identified: The dimensions *social liberalism*, *productivity vs. environment*, *welfare vs. taxes* and *deregulation* are for the most part rooted in the *old* OECD countries, whereas questions of *privatization vs. state ownership* and *EU-accession/integration* as well as *nationalism vs. internationalism* are strong in CEE. Other dimensions seem to be far less important (*urban vs. rural*; *foreign policy*; *military*).

For the resulting 13 dimensions the party specific salience values can be calculated as the sum of the positively and the negatively coded percentages of the quasi sentences (cp. annex table a3).¹⁹ For country wide salience scores the mean of these values, weighted on the vote share, can be used.

¹⁹ This easy calculation is possible because the MRG-data already specify the percentage share of the quasi sentences per category in respect of the total number of quasi-sentences within an election program.

Figure 1: The 13 most salient dimensions within the expert surveys



Shown is the total frequency of one of the 13 dimensions being among the three most salient dimensions in each country in the Laver/Hunt (1992) and Benoit/Laver (2006) surveys. Data for CEE-countries solely refer to the 2006 survey.

For obtaining the policy positions, the negatively coded category values are subtracted from the positively coded ones. The resulting value is divided by the sum of positive and negative values. The resulting ratio-scale has a range between -1 and +1, with -1 indicating the case that all quasi-sentences that are relevant for a dimension have been coded negatively. Vice versa for +1. Using the first dimension, *social liberalism*, as an example, the procedure can be clarified. The dimension is composed out of the three MRG-categories *per603* (traditional morality positive), *per604* (traditional morality negative) and *per503* (social justice positive). The ideological position P of party a on the *social liberalism* (SL) dimension is calculated as follows:

$$P_{SL}(a) = \frac{Per603_a - (Per503_a + Per604_a)}{Per603_a + Per503_a + Per604_a} \quad [1.4]$$

The resulting values can easily be interpreted: Values greater zero indicate parties that tend towards a more traditional morality, whereas values less than zero show up for parties that identify more with social justice and the breakdown of class-, gender- and religious barriers.

Similar calculation formulas can be applied for the other dimensions. Table a3 in the annex lists them. As the MRG-data are available for each election, using these formulas results in a complete timeline of party positions as well as salience scores.

To sum up, the proposed approach uses information about dimension salience from expert surveys to rebuild the 13 most important dimensions with categories from the Comparative Manifesto Project. Thus the ‘combination’ lies solely within the level of the dimensions. The difference between the share of pro- and anti-quasi sentences for one dimension, divided by the total share of quasi-sentences of this dimension gives the position of a party. The benefits of this new approach are manifold: (1) the resulting 13 dimensions have the basic advantage of being conceptually well grounded in contrast to the dimensions inductively calculated via principal components analysis, as it is the norm for the MRG-data; (2) the estimation of time-variant policy positions as well as salience values distinguishes it from expert surveys which for the most part only offer a snapshot for a certain point in time; (3) it is insofar a convenient method as all the data used is already available and thus no new data has to be gathered.

3.1 Potential problems of the combined approach

While having a number of advantages, the proposed approach also holds some potential problems and starting points for critique that one should at least be aware of:

(1) Despite the fact that the dimensions stem from expert surveys, the calculation of the policy positions rests on salience theory. Keeping in mind the problematic aspects of this theory (cp. Laver und Garry, 2000, p.620), the author still regards it as a fruitful way to derive at ideological positions of parties.

(2) The 13 dimensions are of course somehow interrelated. For example there exists a strong conceptual link in between parties that promote strict nationalist ideas and those that oppose the EU. Nevertheless the dimensions are in so far mutually exclusive as every CMP-category – as long as it contains any information about the ideological positioning – only contributes to **one** of the 13 dimensions.

(3) A more technical problem stems from manifestos that do not contain any quasi-sentences for certain dimensions. While the calculation of the dimension salience is easy in this case – it is just zero – it is not possible to determine the ideological position of a party on the respective dimension. This problem is especially relevant for parties that have very short manifestos and for small parties (which are often the same). When small parties are especially interested in policies that do not appear among the most salient issues for the major

parties, these dimensions have potentially been excluded because they are not of nationwide relevance, unless these issues are amongst the three most important dimensions in another country.

(4) The method tends to produce relatively extreme positions, especially when a party attributes little salience to a dimension. Recall that when all the quasi sentences which fall into a dimension are either pro or anti, the score is at its maximum (2.0) or minimum (0). This is of course more often the case when the number of quasi-sentences coded into a certain dimension is small and it is always the case when there is only one quasi sentence comprising the dimension. It is obvious that such a positioning has a higher degree of uncertainty than an ideological position that is based on a high number of quasi-sentences. Using this inverse relationship, standard errors and confidence intervals can be calculated out of the number of quasi sentences falling into one dimension. As an approximation for this procedure the standard errors in this paper are calculated in respect to the overall lengths of the manifesto in terms of number of quasi sentences. The longer the manifesto, the more quasi-sentences per dimension on average, and thus the more accurate the policy positioning should be.

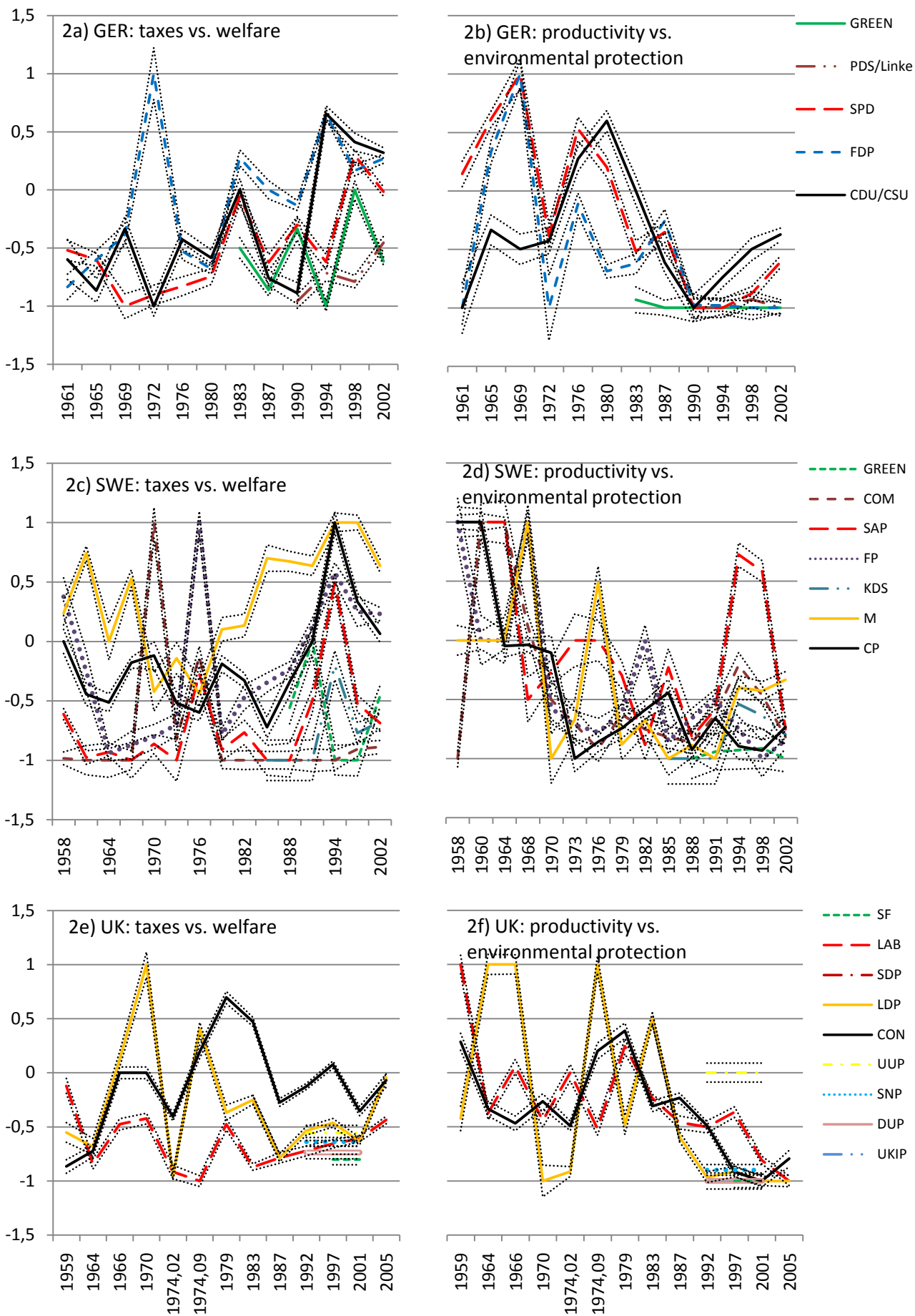
3.2 External validation of the proposed combined method via wordscoring

It is always difficult to validate measures like the proposed one. A first and obvious starting point is to look at the face validity of the estimated time lines. Figure 2a-f show the policy positions since the late 1950s/beginning of the 1960s for Germany, Sweden and the UK on the dimensions *taxes vs. welfare* (tw) and *productivity vs. environmental protection* (pe). At first view the results are promising. The graphs reveal both clear differences between the parties (e.g. between Labour and Conservative on tw) and general shifts of the whole party system (e.g. the shift to the right in 1994 in Sweden on tw, or the general trend towards a more environmental friendly ideology in all three countries).

In accordance with theory the graphs also reveal quite a large variation and volatility, especially for the small parties with normally shorter manifestos (FDP, FP, COM, LDP). For them the probability of having either the maximum or minimum score is higher than for the large parties.²⁰ Furthermore the graphs for the UK reveal a problem within the CMP-data: the small regional parties like Sinn Fein, the Ulster Unionist or Scottish National Party show no variance at all. Here presumably the MRG-values are incorrect.

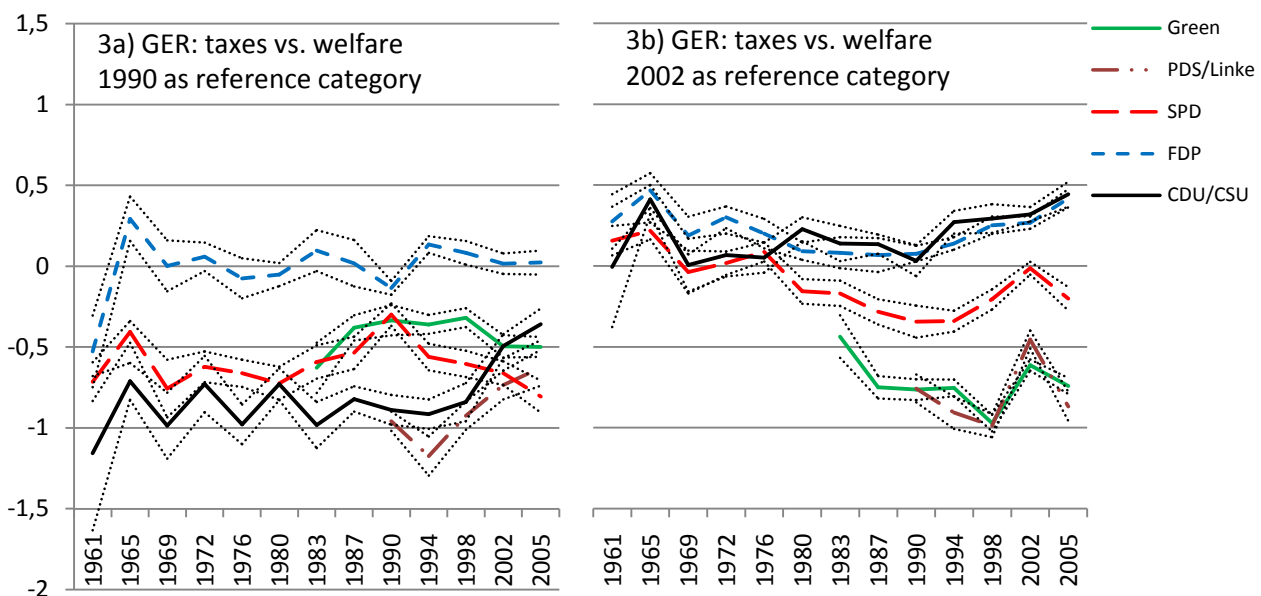
²⁰ When salience is zero, it is the average of the scale (= zero) that is presented. Nevertheless this is the case in only very few circumstances (e.g. the pe-value for the Swedish SAP in 1973) but mostly a value of zero has a real meaning, as the number of positive and negative quasi-sentences counterbalance (e.g. the pe-value for the Swedish FP in 1982).

Figure 2: Policy positions according to the combined measure for Germany, Sweden and UK on dimensions taxes vs. welfare and productivity vs. environmental protection



Looking only at the face validity does not tell the whole story. For obtaining a more complete picture it is necessary to compare the policy positions estimated from this new approach with policy positions that are generated by other means. The *wordscore* approach is ideally suited for such a cross check as it can be used to generate policy positions from the same documents that are also the basis for the CMP and thus the here presented combined approach. For obtaining a timeline of policy positions via *wordscores* one year is chosen from the combined approach, and the values of this year are set as reference in *wordscores*. The policy positions of the other years are then calculated according to the word frequencies of the manifestos.²¹ A thoughtful choice of the reference year is absolutely crucial as can be seen in figures 3a and 3b, where the policy positions estimated from *wordscores* for Germany on the two-dimension are plotted.

Figure 3a and 3b: Policy Positions estimated with Wordscores for Germany on the taxes vs. welfare dimension (values from the combination approach as references)



Apparently 1994 is not very well suited as a reference category. The unusual, extremely left position of the CDU/CSU in this election biases the whole timeline in so far, as the Christian Democrats constantly show a more welfare oriented ideology than the SPD – which is of course highly implausible. However, when 2002 is taken as reference, the graph displays the expected pattern with the CDU and FDP on top, and the PDS and Greens on the ‘pro-welfare’ end of the scale.

When compared with the policy positions from the combined approach (fig. 2a) the *wordscore* time series generally display less spread. The flattened time lines nevertheless

²¹ The texts of the manifestos were provided by the Zentralarchiv für empirische Sozialforschung, GESIS, Universität zu Köln, on behalf of the Comparative Electronic Manifestos Project by Paul Pennings and Hans Keman, Vrije Universiteit Amsterdam, in cooperation with the Social Science Reserach Centre Berlin (Andrea Volkens, Hans-Dieter Klingemann) and the Manifesto Research Group (chairman: Ian Budge).

replicate, at least to some extent, the ones from the combined approach. Although not all shifts that show up in the combined approach can be reproduced via *wordscores*, the general level of the parties and the large trends fit quite well. On this dimension basically the same pattern can be observed for Sweden and the UK (cp. fig. a1 a-d in the annex). For some of the other dimensions the picture is less convincing which again is due to the fact that the less salient dimensions produce more extreme policy positions in the combined approach, being only dependent on a small number of quasi-sentences. However the *wordscore* approach is not able to include the higher level of uncertainty, these positions exhibit, into the estimation process. Furthermore *wordscores* always analyzes the whole manifesto and the estimates are thus based on the complete text, whereas the ideological positioning according to the combined approach is always based on just a segment of the whole manifesto. Therefore it comes as no big surprise that the two methods do not generate completely identical time lines.

4. Conclusion

The twofold aim of this paper was to give an overview of the existent approaches for measuring political party ideologies and to propose a new method that combines the two approaches that had been most influential up to today: expert surveys and hand-coded content analysis of party manifestos.

In the first section party family classification turned out to be a good way to obtain an early and basic impression of the policy positions within a party system. It can furthermore be used as a benchmark against more elaborate measures. Turning to these more advanced approaches especially expert surveys and the Comparative Manifesto Project showed a good record. Nonetheless both reveal distinct shortcomings: the expert surveys that are at hand, had at maximum conducted two waves and thus cannot provide for a real time-line of policy positions; the CMP data on the other hand is mostly used with some sort of factor analysis which generates policy positions on dimensions that have been found on a purely inductive way and thus cannot be interpreted that easily. The proposed combined approach tackles both problems as it uses information about dimension salience from the Laver/Hunt and Benoit/Laver surveys to rebuild the 13 most important dimensions with categories from the CMP. The positions, as well as salience values of all parties listed in the CMP-data can then be calculated according to these dimensions.

The face validity of the policy positions obtained through the combined approach is relatively convincing, at least for the bigger parties with longer manifestos. When compared with

estimates generated by *wordscores* especially the larger variance and higher volatility of the policy positions stands out.

This phenomenon is for the most part caused by those parties that attribute only very little salience to a certain dimension. This results in extreme policy positions that possess, however, a much higher level of uncertainty. Therefore it is suggested to calculate confidence intervals out of the inverse relationship between policy salience (number of quasi-sentences coded into a certain dimension) and the measurement error. The ability to generate confidence intervals is another big advantage of the combined approach. They can for example be used when it comes to simulations like in the policy horizon framework (Warwick, 2006). Overall the proposed combined approach generates policy positions on 13 substantially interpretable dimensions, without the need to gather any further data. Regarding the validity of the measure there seems to be a clear cut between the larger parties whose policy positions can be estimated with a reasonable certainty and the smaller ones, with short manifestos that exhibit considerable scatter in their positions. Further cross checks, for example using the newly invented *wordfish* method, are nonetheless needed to obtain a more thorough understanding of the ideological positioning via the combined approach.

Annex

Table a1: Distribution of governments according to cabinet types

Land	SPG	MWC	SC	SGMIN	MPMIN	CARE	Σ
AUS	9	19	0	0	0	2	30
AUT	4	18	1	1	0	0	24
BEL	3	25	5	2	0	1	36
CAN	17	0	0	9	0	0	26
DEN	0	4	0	12	15	0	31
F	1	8	40	5	4	1	59
FIN	0	8	20	3	5	6	42
GER	1	20	3	1	0	2	27
HUN	0	4	3	0	0	0	7
ITA	0	4	27	11	8	5	55
JAP	25	7	9	7	2	0	50
LUX	1	18	0	0	0	0	19
NL	0	11	9	0	1	4	25
NOR	6	3	0	13	7	0	29
SPA	3	0	0	7	0	0	10
SWE	2	6	0	17	2	0	27
UK	21	0	0	1	0	0	22
Σ	93	155	117	89	44	21	519

SPG = Single Party Government; MWC = Minimal Winning Coalition; SC = Surplus Coalition; SGMIN = Single Government Minority; MPMIN = Multi Party Minority Government; CARE = Caretaker Government. Source: Author's data set.

Table a2: Relevant dimensions according to Laver/Hunt and Benoit/Laver and their operationalization using MRG-data.

Nr	Dimension	Exact question in Laver/Hunt 1992	Exact question in Benoit/Laver 2006	Manifesto positive (L/H B/L = 20)	Manifesto negative (L/H B/L = 1)
1	Urban vs. Rural (2006: only CEE-countries)	1 = Promote interests of urban and industrial voters above others; 20 = Promote interests of rural and agricultural voters above others	1 = Promotes interests of urban voters above others; 20 = Promotes interests of rural voters above others	Per704: middle class and professional groups (+)	Per703: farmers (+)
2	Social Policy (1992); Social Liberalism (2006)	1 = Promote permissive policies on matters such as abortion and homosexual law; 20 = Oppose permissive policies on matters such as abortion and homosexual law	1 = Favors liberal policies on matters such as abortion, homosexuality, and euthanasia; 20 = Opposes liberal policies on matters such as abortion, homosexuality, and euthanasia	Per603: traditional morality (+)	Per503: Social Justice (+) Per604: traditional morality (-)
3	Public Ownership (1992); Privatization (2006: only CEE-countries)	1 = Promote maximum public ownership of business and industry; 20 = Oppose all public ownership of business and industry	1 = Promotes maximum state ownership of business and industry; 20 = Opposes all state ownership of business and industry	Per412: Controlled Economy (+) Per413: Nationalization (+) Per 4124: Socialist Property (+) Per4131: Property Restitution (-) Per 4123: Publicly Owned Industry (+) Per 4132: Privatization (-)	Per401: Free Enterprise (+) Per4011: Privatization (+) Per4012: control of economy (-) Per4013: Property Restitution (+) Per4014: Privatization Vouchers (+)
4	Environmental Policy	1 = Support protection of environment, even at the cost of economic growth; 20 = Support economic growth, even at the cost of damage to environment	1 = Supports protection of environment, even at the cost of economic growth; 20 = Supports economic growth, even at the cost of damage to the environment	Per410: productivity (+)	Per501: Environmental Protection (+) Per 416: Anti-Growth Economy (+)
5	Centralization of Decision Making	1 = Promote decentralization of all decision making; 20 = Oppose any decentralization of decision making	1 = Promotes decentralization of all administration and decision making; 20 = Opposes any decentralization of all administration and decision making	Per301: decentralization (+) Per2033: checks and balances (+)	Per302: centralization (+)
6	Tax vs. public services	1 = promote raising taxes to increase public services; 20 = Promote cutting public services to cut taxes	1 = promote raising taxes to increase public services; 20 = Promote cutting public services to cut taxes	Per505: Welfare State Limitation (+) Per402: Incentives (+)	Per504: Welfare State Expansion (+)
7	US-Trade-links (1992: only CAN)	1 = Pro trade links with USA; 20 = Anti trade links with USA		Per407: protectionism (-)	Per406: protectionism (+)
8	Foreign Policy (only 1992)	1 = Promote development of friendly relations with Soviet Union; 20 = Oppose development of friendly relations with Soviet Union		Per101: Foreign relationships (+) Per107: Internationalism (+) Per1012: Western States (+) Per1013: Eastern European Countries (+) Per1014: Baltic States (+) Per1015: Nordic Council (+) Per 1021: Russia/USSR/CIS (-)	Per102: Foreign relationships (-) Per109: Internationalism (-) Per1011: Russia/USSR/CIS (+) Per1022: Western states (-) Per1023: Eastern European Countries (-) Per1024: Baltic States (-) Per1025: Nordic Council (-) Per1026: SFR Yugoslavia (-)
9	Deregulation		1 = Favors high levels of state regulation and control of the market; 20 = Favors deregulation of markets at every opportunity	Per403: Market regulation (+) Per412: Controlled economy (+)	Per401: Free Enterprise (+) Per402: Incentives (+) Per405: Corporatism (+)

10	Nationalism (2006: only CEE-countries)		1 = Strongly promotes a cosmopolitan rather than a [country name] national consciousness, history and culture; 20 = Strongly promotes a [country name] national rather than a cosmopolitan consciousness, history and culture	Per602: National way of life (-) Per607: multiculturalism (+) Per 107: Internationalism (+) Per6072: Multiculturalism pro Roma (+)	Per601: national way of life (+) Per608: multiculturalism (-) Per109: Internationalism (-) Per6081: Multiculturalism pro Roma (-) Per6013: National Security (+)
11	Quebec (2006: only CAN)		1 = Supports the sovereignty of Quebec; 20 = Opposes the sovereignty of Quebec	Per204: constitutionalism (-) Per 301: decentralization (+) Per602:national way of life (-)	Per203: constitutionalism (+) Per302: centralization (+) Per601: national way of life (+)
12	Defense Policy (2006: only Japan)		1 = Promotes reduced spending on defense; 20 = promotes increased spending on defense	Per105: military (-)	Per:104 military (+)
13	EU-Joining (2006: only non EU-countries)		1 = opposes joining the EU; 20 = Favors joining the EU	Per108: European Integration (+)	Per110: European Integration (-)
14	EU-Authority (2006: only EU 15 minus France and Ireland)		1 = Favors increasing the range of areas in which the EU can set policy; 20 = Favors reducing the range of areas in which the EU can set policy		
15	EU larger/stronger (2006: only France)		1 = Opposes an expanded and stronger EU; 20 = Favors an expanded and stronger EU		
16	EU-Peacekeeping (2006: only EU 15)		1 = Favors [country name] involvement in European security and peacekeeping missions; 20 = Opposes any [country name] involvement in European military affairs		
17	EU-Accountability (2006: only EU-15)		1 = Promotes the direct accountability of the EU to citizens via institutions such as the European Parliament; 20 = Promotes the indirect accountability of the EU to citizens via their own national governments		
18	Neighbor Relations (2006: only Lithuania)		1 = Supports closer relations with Eastern neighbors rather with NATO and western Europe; 20 = Supports closer relations with NATO and western Europe rather than with eastern neighbors	Absorbed by the foreign policy dimension	
19	Northern Ireland (1992 and 2006: only IRL)	1 = Pro British Presence in Northern Ireland; 20 = Anti British Presence in Northern Ireland	1 = Supports long-term maintenance of Northern Ireland as Part of United Kingdom; 20 = Supports goal of a united Ireland	Absorbed by the nationalism and foreign policy dimension	
20	Nuclear (1992: only GB and NZ)	1 = Antinuclear; 20 = Pronuclear		Absorbed by the environmental policy dimension	

21	Health-Care (only AUS, CAN, NZ, JAP, und USA)		1 = Advocates that the government should provide universal free health care; 20 = Advocates that medical expenses should be paid by individuals and private insurance plans	Absorbed by the welfare dimension (Tax vs. public services)
22	Religion (1992: only Italy; 2006: only CEE-countries)	1 = Anticlerical; 20 = Proclerical	1 = Supports religious principles in politics; 20 = Supports secular principles in politics	Absorbed by social liberalism
23	US-Affairs (2006: only AUS, CAN, NZ, JAP, and USA)		1 = Supports an expanded US military and political role in world affairs; 20 = Opposes an expanded US military and political role in world affairs	Not covered by the MRG-data
24	Immigration		1 = Favors policies designed to help asylum seekers and immigrants integrate into [country name] society; 20 = Favors policies designed to help asylum seekers and immigrants return to their country of origin	Not covered by the MRG-data
25	Media Freedom (2006: only CEE-countries)		1 = The mass media should be completely free to publish any material they see fit; 20 = The content of mass media should be regulated by the state in the public interest	Not covered by the MRG-data

Ideological position: $IP = \frac{x-y}{x+y}$; salience/relevance of a dimension: $salience = x + y$.

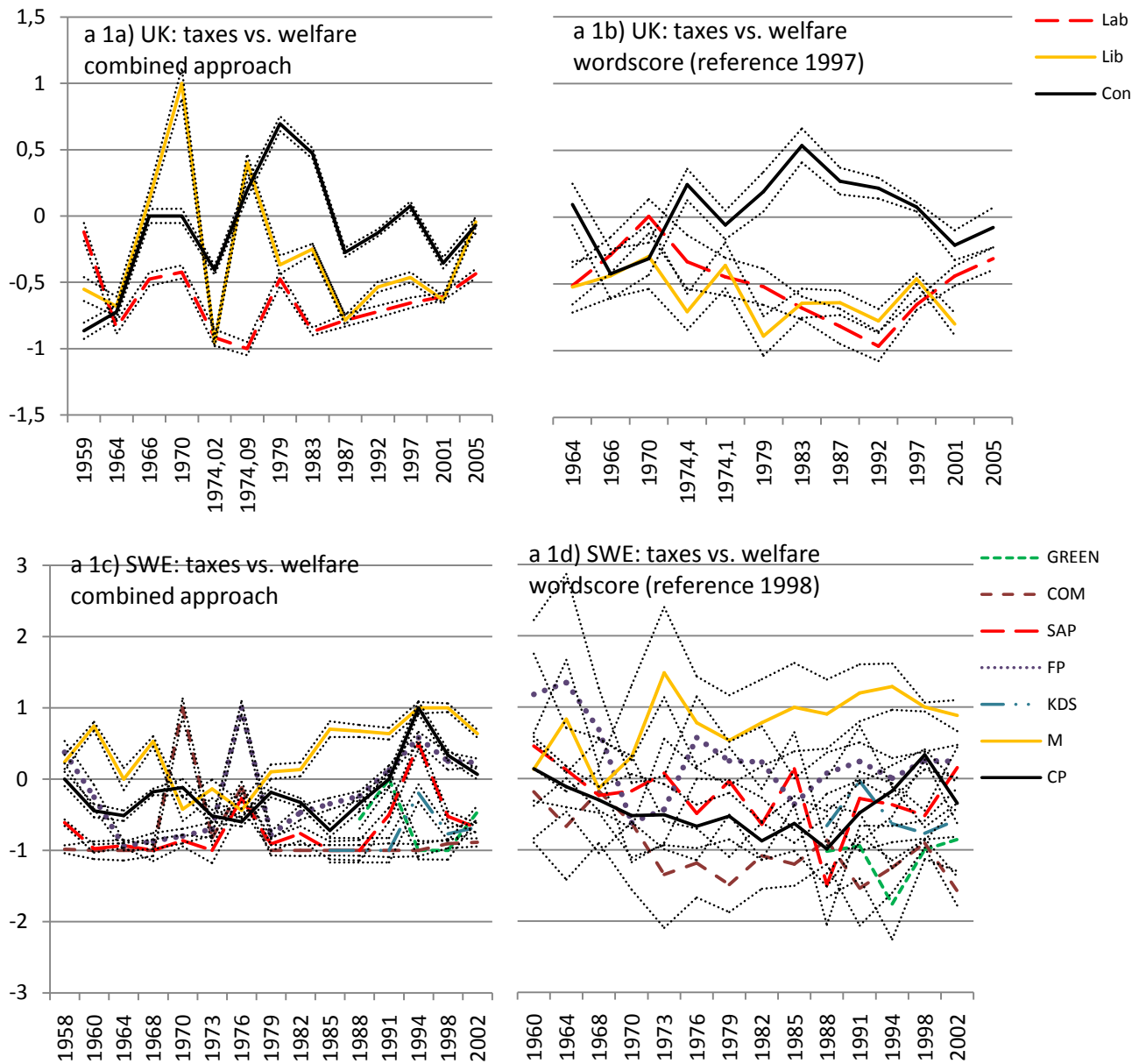
Table a3: Calculation of the ideological positions and salience scores.

Nr	Dimension	Description	Calculation ideological position	Calculation dimension salience
1	Urban vs. Rural (worker/white collar employee vs. farmer)	+1 = preferential treatment of the countryside/rural population; -1 = preferential treatment of the urban/industrial population	$(Per704 - Per703)/(Per703+Per704)$	$(Per703+Per704)$
2	Social liberalism	+1 = traditional morality and little social liberalism; -1 = no traditional morality and large social liberalism	$[Per603 - (Per503+Per604)]/(Per503+Per603+Per604)$	$(Per503+Per603+Per604)$
3	Privatization vs. state ownership	+1 = Privatization negative and public ownership positive; -1 = Privatization positive and public ownership negative;	$[(Per412+Per413+Per4123+Per4124+Per4131+Per4132) - (Per401+Per4011+Per4012+Per4013+Per4014)]/(Per412+Per413+Per4123+Per4124+Per4131+Per4132+Per401+Per4011+Per4012+Per4013+Per4014)$	$(Per412+Per413+Per4123+Per4124+Per4131+Per4132+Per401+Per4011+Per4012+Per4013+Per4014)$

4	Productivity vs. environmental protection	+1 = maximum productivity at the expense of the environment; -1 maximum environmental protection at the expense of economic growth	$[(\text{Per410} - (\text{Per416} + \text{Per501})) / (\text{Per410} + \text{Per416} + \text{Per501})]$	$(\text{Per410} + \text{Per416} + \text{Per501})$
5	Decentralization vs. centralization	+1 = maximum decentralization and separation of powers; -1 = maximum centralization	$[(\text{Per301} + \text{Per2033}) - \text{Per302}] / (\text{Per301} + \text{Per302} + \text{Per2033})$	$(\text{Per301} + \text{Per302} + \text{Per2033})$
6	Welfare vs. taxes	+1 = minimal welfare and low taxes; -1 = maximum welfare	$[(\text{Per402} + \text{Per505}) - \text{Per504}] / (\text{Per402} + \text{Per504} + \text{Per505})$	$(\text{Per402} + \text{Per504} + \text{Per505})$
7	Foreign policy	+1 = primarily positive, friendly relations to other (western) countries and affirmation of international cooperation; -1 = primarily bad relations to other (western) countries, but good relations to Russia	$[(\text{Per101} + \text{Per107} + \text{Per1012} + \text{Per1013} + \text{Per1014} + \text{Per1015} + \text{Per1021}) - (\text{Per102} + \text{Per109} + \text{Per1011} + \text{Per1022} + \text{Per1023} + \text{Per1024} + \text{Per1025} + \text{Per1026})] / (\text{Per101} + \text{Per107} + \text{Per1012} + \text{Per1013} + \text{Per1014} + \text{Per1015} + \text{Per1021} + \text{Per102} + \text{Per109} + \text{Per1011} + \text{Per1022} + \text{Per1023} + \text{Per1024} + \text{Per1025} + \text{Per1026})$	$(\text{Per101} + \text{Per107} + \text{Per1012} + \text{Per1013} + \text{Per1014} + \text{Per1015} + \text{Per1021} + \text{Per102} + \text{Per109} + \text{Per1011} + \text{Per1022} + \text{Per1023} + \text{Per1024} + \text{Per1025} + \text{Per1026})$
8	EU	+1= in principle pro EU-(Integration); -1= in principle vs. EU-(Integration)	$[\text{Per108} - \text{Per110}] / (\text{Per108} + \text{Per110})$	$(\text{Per108} + \text{Per110})$
9	Deregulation	+1 = state regulation of the market and maximum control over economy; -1 = maximum freedom of the market and the economy from state interventions	$[(\text{Per403} + \text{Per412}) - (\text{Per401} + \text{Per402} + \text{Per405})] / (\text{Per401} + \text{Per402} + \text{Per403} + \text{Per405} + \text{Per412})$	$(\text{Per401} + \text{Per402} + \text{Per403} + \text{Per405} + \text{Per412})$
10	Free trade vs. protectionism	+1 = maximum free trade; -1 = maximum protectionism	$(\text{Per407} - \text{Per406}) / (\text{Per406} + \text{Per407})$	$(\text{Per406} + \text{Per407})$
11	internationalism vs. nationalism	+1 = against nationalist tendencies; -1= in favor of nationalistic tendencies	$[(\text{Per107} + \text{Per602} + \text{Per607} + \text{Per6072}) - (\text{Per109} + \text{Per601} + \text{Per608} + \text{Per6013} + \text{Per6081})] / (\text{Per107} + \text{Per602} + \text{Per607} + \text{Per6080} + \text{Per109} + \text{Per601} + \text{Per608} + \text{Per6013} + \text{Per6081})$	$(\text{Per107} + \text{Per602} + \text{Per607} + \text{Per6080} + \text{Per109} + \text{Per601} + \text{Per608} + \text{Per6013} + \text{Per6081})$
12	Regionalism/ secessionism	+1 = Regions with maximum independence, weak central government; -1 = strong central government and national/constitutional patriotism	$[(\text{Per204} + \text{Per301} + \text{Per602}) - (\text{Per203} + \text{Per302} + \text{Per601})] / (\text{Per204} + \text{Per301} + \text{Per602} + \text{Per203} + \text{Per302} + \text{Per601})$	$(\text{Per204} + \text{Per301} + \text{Per602} + \text{Per203} + \text{Per302} + \text{Per601})$
13	military	+1 = disarmament, low military expenditures; -1 = arms build up, high military expenditures and a generally high relevance of the military	$(\text{Per105} - \text{Per104}) / (\text{Per105} + \text{Per104})$	$(\text{Per105} + \text{Per104})$

The 13 dimensions are constructed out of the MRG-data as shown in table a2. Columns 4 and 5 show the calculation of the ideological positions and the salience scores. The “PerXXX” indicate the MRG-category.

Figure a1: Comparison between combined approach and *wordscore* replication for UK and Sweden on the taxes vs. welfare dimension



The small UK parties have been omitted from the graph, because first, their CMP-values are obviously erroneous and second, their manifestos are not available, undermining a *wordscore* analysis of them. The Swedish case is interesting, as here *wordscores* does not flatten out the timeline, but increases the spread, so that the estimated policy positions for some parties (M, SAP, Green, COM) leave the original maximum corridor from -1 to +1. And also the confidence intervals are considerably larger than for the other *wordscore* estimates from Germany and the UK.

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