**Supplementary Online Material**

**Knowing More from Less: How the Information Environment Increases Knowledge of Party Positions**[[1]](#footnote-1)

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This document provides additional information and supplementary material on “Knowing More from Less: How the Information Environment Increases Knowledge of Party Positions” published in the British Journal of Political Science. More specifically, we provide details on the measurement of our key dependent variable – the knowledge gap in the placement of parties on the European integration scale – and some additional information on our control variables.

1. **The Verified Party Position – Approach and Procedure**

As pointed out in the paper, there is no consensus in the empirical literature on how to obtain verified – or true – party positions. First, some studies use the average perceived party position calculated on the bases of mass surveys as a proxy for the true position. Linking these positions to the perceptions of the same group of individuals results in major problems of endogeneity because they are affected by the same factors. For example, it would be very difficult to disentangle information effects – the crucial explanatory variables in our paper – from other factors because they contribute not only to an individual’s ability to place a party but also to the average perceived position of the party. Moreover, if we assume that positions of certain parties are easier to identify than others, we are not only stuck with an overall measurement error but with the addition of party-specific errors.

Second, expert judgments are often described as valid measures of verified party positions. This is certainly the case for many but not for all expert scores.[[2]](#footnote-2) More importantly, expert scores for party positions are only available for a limited number of parties and at certain points in time which makes it rather difficult and sometimes problematic to link them to survey data.

Third, while positions generated from electoral party manifestos as provided by the MARPOR project do not suffer from the problem of temporal consistency they are generally measured on a very different scale (-100 to 100) compared to voters’ positions which, additionally, rests on a different logic. Following the tradition of the Comparative Manifesto Project, now known as the MARPOR project,[[3]](#footnote-3) party positions are the result of the balancing of two unipolar scales counting the positive and negative statements in the manifesto respectively. However, perceived party positions and expert judgments are measured on bipolar scales. As a result, the distributions of respondents’ perceived and MARPOR party positions are rather different. Obviously, they are not supposed to be completely identical but the differences point to significant problems if the data are linked. This cannot be solved by straight-forward, country-wise scale transformation, for example, normalization, nor by the reinterpretation of the original, theoretical scale in favour of an empirical scale ranging from the smallest to largest real world value. The rescaling of the theoretical range of the MARPOR measure would assign a value of 0 to parties which have a value of -100 in the MARPOR dataset and a value of 10 to those with a value of 100. The results of such transformations are presented in Figure 1 (upper plots). Obviously, the rescaling of the theoretical MARPOR scale pushes all parties to the middle of the 11-point scale. Country-wise normalization, assigning a value of 0 to the most EU-sceptic and 10 to the most EU-positive party, leads by definition to a large number of extreme parties because each country has to have at least one party on each of the endpoints of the scale. Hence, the usage of MARPOR positions would give biased results. Depending on the transformation procedure the bias would either be in favour of more extreme or more centrist parties. The transformation based on the theoretical range results in very small perception gaps for centrist parties (upper left plot) while the ‘empirical’ transformation would minimize perception gaps for extreme parties (upper right plot). This is the case because the first procedure more or less leaves centrist parties at their original relative position (close to the centre) while more extreme parties are pushed close to the centre as well. As a consequence, respondents rating, for example, the British National Party (BNP) as rather EU-sceptic, probably giving them a value of 0 to 2, would end up with a rather large perception gap because the MARPOR value for the BNP is not even close to the theoretical endpoint of the scale. The same logic – but the other way around – applies to country-wise normalization.

Fourth, PIREDEU data enables scholars to measure party positions in a more direct way using electoral candidates’ positions. Such a strategy, meaning using the positions of candidates or elected officials as a measure of party positions has been used successfully in various settings and to address very different research questions (e.g., van Schuur 1987; Thomassen and Schmitt Thomassen 1999; Golder and Stramski 2010). The 2009 European Election Candidate Study (EECS) included a question on the perceived party positions on the EU integration issue which is measured on the same scale as in the voter survey. However, the EECS suffers from the same problem as many other elite surveys: moderate response rates (Giebler and Weßels 2010). Hence, the information for some parties would be based either on a very low number of candidates or there would be no information available at all for certain parties which could introduce another and hardly definable bias on the definition of verified party positions.

Based on these serious drawbacks we use a more complex approach to measure the verified party positions in our paper taking the best of several worlds and incorporating new developments regarding the treatment of the missing value problems. We use both the candidate survey and the European Election Manifesto Study (Braun, Mikhaylov, and Schmitt 2010) for a multiple imputation procedure.[[4]](#footnote-4) The procedure can be divided into five steps:

1. We define the number of parties for which there is valid information in the candidate survey by relying on a 20 per cent response rate threshold. In addition, we restrict this sample further by dropping all parties for which we have less than two responses. As candidates can be described as experts, we see this as appropriate thresholds. Moreover, these thresholds are more rigid if we compare them to the average number of coders used to generate expert judgements.[[5]](#footnote-5)
2. The verified party position on EU integration is calculated as the weighted mean of the judgement of all candidates running for the respective party.[[6]](#footnote-6) By definition, the measurement scale of these means is identical to the original scale and, therefore, identical to the scale used in the voter survey. A missing value is assigned to all parties not fulfilling the criteria set in step one.
3. This dataset is merged with the European Election Manifesto Study dataset. We set up a multiple imputation procedure imputing verified party positions with 500 iterations for all parties not fulfilling the criteria described in step one. We use a truncated regression for a continuous variable with a restricted range as the imputation equation. As a result, the imputed values are forced to be elements of the original scale.[[7]](#footnote-7) The imputation regression uses only information exogenous to the candidate survey as regular variables; they represent the set of calculated policy positions (five policy areas) provided in the manifesto data set. Additionally, we controlled for the nested structure of our data by including country dummies as regular variables in the imputation equation.
4. The verified party positions for those parties with missing values are calculated as the mean of the 500 imputed values.[[8]](#footnote-8) The average standard error for the mean calculation is .12 which represents only about one percent of the overall range of the scale. The low figure indicates sufficient reliability of the measure.
5. Finally, the verified party positions are merged with the voter survey. The gaps are calculated as the absolute distance between the perceived and the verified party position for each pair of voters and parties.

**Figure 1**: *Different measures of party positions on EU integration*



*Note:* EMS = European Manifesto Study; EVS = European Voter Survey

Figure 1 shows that the distribution of our generated verified party positions (lower right plot) follows the distribution of perceived party positions (lower left plot) much closer than the two transformed scales (normalization of EMS data based on either the theoretical or the empirical range). Hence, while a bias might arise with the first two measures, with our party position measure a bias is minimized if at all existing in any of the empirical models.

**Figure 2**: *Party positions on EU integration (mean and verified party positions)*

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To enable further comparison, we calculated the mean party positions on EU integration based on survey responses. In Figure 2, we plot these values against the verified party position we are using in our analyses. The two measures are strongly correlated, however, the mean perceived party positions produce far less variation and are more closely concentrated around the mean. In fact, the most Euro-sceptic party has a value around two, while our verified measure makes better use of the whole range of the scale. Just as an example, the UKIP – probably one of strongest opponents to EU integration – has a mean perceived value of three while the verified measure assigns a value of zero. Hence, we see this as further confirmation that the verified party positions are far less distorted due to perception bias or the tendency to assign the scale mid-point in instances in which the respondent does not know the party’s position at all.

As a result, the perception gaps calculated on the basis of our verified measure of party positions are somewhat larger on average (Figure 3). Again, there is a strong correlation between the two different measurements. While on average a bit smaller, the results do not indicate that respondents know much about party positions if we calculate the gap based on the mean party positions.

**Figure 3**: *Mean perception gap for each party (mean and verified party positions)*



**B) Description of Control Variables**

As pointed out in the paper, we include several control variable at the party, individual (subject specific) and country level- On the party level, incumbents have greater possibility to communicate directly with the voter based on their government activities (Shepsle 1972). The positions of incumbent parties might thus be perceived as more certain than the ones of opposition parties: we therefore assume that the agreement on party positions will be higher for incumbent parties on the EU dimension.

Turning to individual indicators, voters will have different levels of motivation about becoming engaged in politics leading to variations in levels of knowledge. Thus, we control for political interest which is an indicator for an individual’s motivation and involvement. Greater interest should lead to a better placement of parties (Delli Carpini and Keeter 1996; Prior 2003; Prior 2005; Lenz 2012). Citizens’ level of EU identity might also influence their knowledge of the policy space on Europe. Thus, we also control for citizens’ sense of European identity.[[9]](#footnote-9) As an additional robustness test we take into account how likely citizens would ever vote for a party (propensity to vote). The measure can also be described as an indicator of familiarity with a certain party. Such familiarity makes additional information from media sources to a certain degree less necessary. Finally, we include a measure identifying respondents with problematic answering patterns to the party placement items. Such answering behaviour is probably a sign of respondents seeing EU integration as a non-issue and/or respondents having no information on the issue. Both aspects should lead to a lower ability to place parties correctly.

On the country level, we only include two control variables: A measure of programmatic diversity because the clarity of party positions is a precondition of spatial voting models. If parties have very similar positions regarding a specific issue it is more difficult for individuals to place them correctly. Moreover, we include the effective number of electoral parties following the assumptions that it is more difficult to be familiar with party positions if the number of parties is high.

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2. This was shown in other fields of political science (Bollen and Paxton 1998; Giebler 2012; Steenbergen and Marks 2006). [↑](#footnote-ref-2)
3. Descriptions of the *Comparative Manifesto Project/MARPOR project* can be found in Budge et al. 2001, Klingemann et al. 2006 and Volkens et al. 2013. There is a long debate whether party positions measured by the CMP approach are reliable and valid. While we agree that there are some problems with the coding procedures, it seems reasonable to assume that the applied procedures of coder training and reliability tests reduce them to an acceptable level. [↑](#footnote-ref-3)
4. There is not enough room here to introduce the basic ideas of multiple imputation or the underlying mathematical formula. Hence, we refer interested readers to the work of Rubin (2004). All imputation procedures were carried out in Stata 12. Information on the practical application can be found in the Stata 12 manual MI. [↑](#footnote-ref-4)
5. We also applied other, more restrictive thresholds, for example, a response rate of at least 30 per cent and three candidates per party. The resulting verified measure of party positions is very similar to those we use in the paper. In fact, the correlation of the measures is .80 and highly significant. [↑](#footnote-ref-5)
6. ‘Weighted’ refers in this case to survey sampling weights to achieve known population margins (Giebler, Haus, and Weßels 2010). [↑](#footnote-ref-6)
7. In fact, this is more a precaution than a true necessity. Due to the high number of iterations several thousands of values have been imputed and only three of them were outside the 11-point scale and had to be truncated. [↑](#footnote-ref-7)
8. The multiple imputation standard procedure does not result in using means over all imputations but running separate models for each of the imputations. We refrained from doing so, firstly, because the high number of imputations enables the calculations of valid means. Secondly, the final explanatory models are very complex (three level multi-level model including interactions) and it is applied to more than 100,000 cases. Hence, the computational effort for the model taking into account the 500 imputations would be quite substantive. [↑](#footnote-ref-8)
9. In our analysis, we use European identity as a general indicator of sentiments about European integration. There is a large body of literature which addresses the dimensions of European identity and support (Hooghe and Marks 2004). [↑](#footnote-ref-9)