Political Science Research and Methods Vol 6, No. 1, 135–151 January 2018
© The European Political Science Association, 2016
doi:10.1017/psrm.2016.7

Separating Candidate Valence and Proximity Voting: Determinants of Competitors' Non-Policy Appeal*

DOMINIC NYHUIS

Previous scholarship has provided ample evidence that non-spatial considerations can trump voters' policy preferences in candidate selections. The literature has been less successful, however, in providing a sense of the factors that raise candidates' non-policy appeal. Faced with the challenging task of separating policy and non-policy aspects of individual vote choices, empirical research has frequently relied on shorthand measures like candidate incumbency. This paper separates the valence component from policy-based candidate selections by explicitly supplying voters with information on the policy agreement between themselves and their district candidates. Relying on the distinction between campaign valence *and* character valence *by Stone and Simas, it is shown that candidate valence is driven by candidate visibility in a party-dominated political system.*

Electoral decisions are not exhaustively described by the ideological proximity between voters and candidates. A Downsian-type model of party competition holds that parties or candidates take positions in a policy space and that voters choose the alternative that is ideologically closest to them (Downs 1957). Scholars have noted that this view does not provide a comprehensive description of party competition—neither conceptually nor in terms of the empirical implications' accuracy (Adams and Merrill 2003, 161–2). In an early critique of the Downsian model, Stokes (1963) points out that there are numerous issues like the economic prosperity of a country, where voters—by and large—do not diverge with respect to the desired policy outcomes. Therefore, competitors do not campaign by staking out policy positions on these scales. Instead, competition is driven by public perceptions of competence or actual quality differentials (Aragones and Palfrey 2004; Buttice and Stone 2012).

Recent research including the quality aspect of political competition has typically assumed that there are two factors that determine the electoral success of competitors, a *policy*- and *a non-policy-related* component, i.e. ideological proximity and candidate valence. These candidate evaluation factors are typically treated as orthogonal in the formal contributions on the subject (Ashworth and Bueno de Mesquita 2009; Serra 2010). Empirically, however, it is difficult to separate the two factors and to capture their relative importance for individual vote choices due to the well-known rationalization effects when trying to capture candidate quality and policy proximity from surveys (Conover and Feldman 1986; Bartels 2002a; Lebo and Cassino 2007). Specifically, it is challenging to determine the familiarity of voters with the policy profiles of candidates and, hence, whether they are able to correctly assess their ideological proximity to the candidates.

* Dominic Nyhuis, Department of Political Science, Goethe University Frankfurt, Theodor-W.-Adorno-Platz 6, 60323 Frankfurt (dominic.nyhuis@soz.uni-frankfurt.de). The author is grateful for feedback on the ideas that are put forth in this paper by Jens Brandenburg, Sean Carey, and Thomas Gschwend. The author is particularly indebted to Martin Elff, Lukas Stötzer, and Steffen Zittlau for invaluable suggestions that have greatly improved the paper. The author also likes to express the gratitude to the curators of the platform http://www.abgeordnetenwatch.de, specifically Martin Reyher and Roman Ebener, for allowing the author to run the additional questionnaire on their site.

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

In this paper, I propose to estimate a comprehensive indicator of the valences of candidates competing in the German federal election of 2013 while controlling for the effect of ideological proximity. This is done by explicitly familiarizing voters with the policy positions of district candidates and making vote recommendations based on a comparison between the individual policy preferences and the candidates' profiles. After informing voters about their *correct vote* choice from a spatial perspective (cf. Lau and Redlawsk 1997; Lau, Andersen and Redlawsk 2008), voters are invited to indicate their prospective vote choice. The systematic residual between the *correct vote* and the actual prospective vote choice provides a comprehensive estimate of the candidates' valences. The research thus makes two important contributions. One, it introduces a novel technique for estimating candidate valences and also provides a data set of candidates' valence advantages in the German federal election of 2013. Two, the research investigates determinants of variations in the size of candidate valences.

The remainder of this article begins by briefly outlining the valence factor of vote choices as well as components of candidate valence. Third section describes the data and method that is applied in the empirical investigation. The association of the explicit valence indicators and candidate status is the subject of fourth section. Fifth section provides some additional robustness checks. Sixth section concludes.

THE VALENCE COMPONENT OF VOTE CHOICES

In his seminal critique of the dimensional model of politics, Stokes (1963) argues that numerous issues structure political competition where neither voters nor political actors differ with regard to preferred outcomes (cf. Stokes 1992). Faced with such *valence-issues*, political competition shifts to perceptions of competence or the ability to deliver upon promises to create the universally desired outcomes. Since the proposition of the valence concept by Stokes, numerous contributions have been put forth that investigate how non-policy factors are related to candidate behavior and electoral success. Several formal contributions on the subject have introduced valence in Downsian-type models to explore variation in candidate position-taking induced by valence differentials (Groseclose 2001; Aragones 2002; Schofield 2004; Schofield 2007; Ashworth and Bueno de Mesquita 2009; Hummel 2010; Bernahrdt, Camara and Squintani 2011) and to derive equilibria in multi-party or multi-dimensional competition settings (Ansolabehere and Snyder 2000; Schofield 2003).

Empirical contributions on the valence theory of politics have investigated how specific non-policy characteristics of candidates are related to electoral outcomes. The most well-known factor that alters vote choices is the incumbency status of the candidate (Cox and Katz 1996; Berry, Berkman and Schneiderman 2000; Burden 2004; Hogan 2008; Stone et al. 2010). But candidate valence is a multi-dimensional concept that has been taken to mean a variety of things in the literature, such as "incumbency, greater campaign funds, better name recognition, superior charisma, superior intelligence" (Groseclose 2001, 862). A useful distinction to classify aspects of candidate valence was put forth by Stone and Simas (2010). The authors assert that it is possible to differentiate between *campaign valence* and *personal character valence*. While the former encompasses characteristics like name recognition and campaign funds, *personal character valence* covers factors such as "integrity, competence, and dedication to public service" (Stone and Simas 2010, 373).[1]

[1] A similar argument was proposed by Adams et al. (2011) who differentiate between *strategic valence* and *character valence*. Although different in name, the two dimensions of valence refer to the same aspects as the *campaign valence* and *personal character valence* in the sense of Stone and Simas (2010).

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

The formal contributions on the valence theory of voting have dealt with the multi-dimensionality of the concept by defining comprehensive valence parameters to capture the range of factors contained in the concept. Conversely, the empirical literature has struggled to come up with comprehensive measures of candidate valence. The challenge of generating comprehensive empirical estimates of valence is related to the difficulty of capturing valence from survey evidence. Faced with systematic distortions in the candidates' perceived policy profile in survey data (Conover and Feldman 1986; Granberg and Brown 1992; Merrill, Grofman and Adams 2001), it is unclear to what degree proximity voting and candidate valence drive individual vote choices.

Consequently, the empirical research has frequently relied on shorthand indicators for candidate valence such as the incumbency status of candidates. While the research has consistently shown that this indicator is systematically and positively related to electoral outcomes, it cannot provide a comprehensive image of the valence advantage of candidates. Moreover, it has the implausible feature to not produce variation in valence among the group of incumbents. One alternative measure to estimate the effect of valence on electoral outcomes was recently proposed by Clark (2009). In an extensive hand coding of several Western European countries, the author records political events that are related to public perceptions of parties' "competence, integrity and unity" (Clark 2009, 112). As expected, the measure is negatively related to the vote share of parties in subsequent electoral cycles. While the work is a commendable contribution, the effect of events on party images only provides evidence at the level of the *character valence* in the terminology of Stone and Simas (2010).[2] *Campaign valence* factors of incumbents like increased funds or access to staff should be largely unaffected by political scandals. Another two recent contributions grapple with the difficulty of generating empirical and comprehensive measures of candidate valence by employing expert ratings of candidate valence. Stone and Simas (2010) investigate the long-standing proposition in the formal literature that there are position-taking incentives of valence advantages while Buttice and Stone (2012) show that candidate quality alters individual vote choices and that the size of the effect is conditional on the position-taking of candidates.

The present research project intends to provide a comprehensive estimate of the valence advantages of candidates for the German *Bundestag*. The subsequent investigation of the measure assesses how it is related to determinants of candidate valence. Drawing on the distinction between *campaign valence* and *personal character valence* by Stone and Simas (2010), I suggest that campaign valence and candidate visibility in particular should be most closely related to the estimated candidate valence. Stone and Simas propose that voters intrinsically care only about the personal character valence of candidates, whereas campaign valence is rather an accidental by-product of the nature of the competition. While the assertion is plausible that voters care most about quality of character, elements such as integrity and honesty are comparatively difficult to assess for voters. Conversely, factors that drive the visibility of candidates should be more closely related to the comprehensive indicator as voters need to be familiar with candidates in order to consider them viable electoral alternatives.

The dominant factor of campaign valence in the comprehensive valence measure is particularly true for the German electoral system that is dominated by parties. In the two-tiered German electoral system, a list vote determines the overall composition of the *Bundestag*, although voters can personalize their choices by selecting a nominal district candidate (Saalfeld 2009). As the electoral law is governed by the proportional component and therefore by the

[2] As Clark (2009) focuses on the images of parties rather than individual candidates, *personal character valence* refers to perceptions of the character of collective actors in this case.

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

behavior of parties, the nominal candidates are frequently relatively unknown quantities. Consequently, the valence component of candidates should primarily be driven by the need to make themselves visible (campaign valence) before hoping to showcase their integrity (character valence). Stone and Simas suggest in their outline of the two dimensions of valence that there is a systematic relationship between *character valence* and *campaign valence* where candidates with a character valence advantage might be more successful in attracting campaign funds (Stone and Simas 2010, 373). Conversely, it seems unlikely that there is a pronounced effect of *character valence* on *campaign valence* in the German case where individual candidacies are generally less dependent on third-party funds for their campaign activities. For example, nominal candidates in the 2013 German federal election only covered about 20 percent of their campaign expenses with third-party donations on average (Rattinger et al. 2014). Put differently, political systems that are dominated by parties are unlikely to exhibit substantial effects of *personal character valence* on either *campaign valence* or electoral outcomes. In an extension of the arguments put forth by Stone and Simas (2010), I suggest that it is possible to differentiate between candidate visibility at the national level and at the local level. There are elements that increase the valence of candidates such as holding a governmental office (national level) and elements that are more strictly tied to the district competition such as the number of campaign appearances in the electoral district (local level).

A COMPREHENSIVE MEASURE OF CANDIDATE VALENCE

One of the principal challenges for investigating candidate valence from surveys is the difficulty to assess whether voters are familiar with the policy positions of candidates. Candidate placements on policy scales are subject to distortions and rationalizations (Bartels 1988; Granberg and Brown 1992; Merrill, Grofman and Adams 2001), impeding a differentiation between the valence and proximity component of vote choices. To circumvent this limitation, this paper employs evidence from a vote advice application of German nominal candidates during the 2013 federal election campaign. The online tool explicitly provided voters with information on the policy positions of their district candidates and made vote recommendations based on voters' policy preferences. Subsequently, voters were invited to indicate their prospective vote choices and in numerous instances voters did not select the candidate that was indicated as ideologically closest by the vote advice application. This sequence of the data collection allows explicitly ruling out the possibility that voters' selections are driven by their unawareness of the candidates' policy positions. Instead, candidate valence trumped proximity considerations. In the remainder of this section, I sketch the data collection and outline the generation of the valence estimates. This section closes with an overview of the operationalizations of the variables that should be related to the valence parameters.

During the German federal election campaign of 2013, the curators of the platform (http://www.abgeordnetenwatch.de) assembled a survey with a binary response format—the *Kandidatencheck*—and invited all nominal candidates to participate. The questionnaire covered both core issues of the electoral campaign (e.g., the retirement age, austerity policies, and internet surveillance) as well as long-term concerns of the German political system (e.g., minimum wages, temporary staff policies, and renewable energies). Moreover, the items were selected to cover most major policy areas and the two ideological dimensions that structure electoral competition in Germany—an economic left-right dimension on the one hand and a cultural dimension on the other (Bräuninger and Debus 2008; Pappi and Brandenburg 2009). To alleviate concerns regarding potential effects of biased issue selection on the vote recommendations, the items were assembled by the platform's

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

curators in collaboration with the political editors of those public and private media outlets that featured the survey on their web appearances to generate publicity for the platform and to inform voters about the available alternatives.[3]

The candidate responses were made publicly accessible in the form of a vote advice application in the weeks before the election (Cedroni and Garzia 2010; Schultze and Marschall 2012), allowing voters to log on to the platform and take an identical survey. After inputting their responses, the system calculated an agreement score between the voters and their nominal candidates and output the list of candidates—ordered by the proximity of the stated policy preferences.[4] Having been provided a vote recommendation, users of the platform were invited to respond to a supplemental questionnaire. The additional questionnaire collected, *inter alia*, information on the users' prospective vote choices in the upcoming federal election.[5]

To estimate the candidate valences, I model the individual vote choices and control for policy distance as provided by the vote advice application, thus capturing the valences in candidate-specific residuals. First, the distance between the users' policy preferences and the candidates' policy profiles is calculated for each user.[6] The choice for one of the five district candidates is then included in a mixed conditional logit model where the policy distance is the main explanatory variable.[7] I further include party fixed effects in order to control for selections that are driven by party label rather than candidate-specific factors.[8] The model has the following form—the vote choice of individual i for competitor j from the choice set S_i of the five district competitors is given as

$$\pi_{ij} = \frac{\exp(\eta_{ij})}{\sum_{k \in S_i} \exp(\eta_{ik})},$$

and

$$\eta_{ij} = \beta^{distance}\ distance_{ij} + \beta^{spd}\ spd_j + \beta^{gruene}\ gruene_j + \beta^{fdp}\ fdp_j + \beta^{linke}\ linke_j + U_j,$$

where U_j are random effects with a normal distribution, estimated to be equal for all individuals faced with the same choice set. The candidate-specific random effects are treated as estimates of the comprehensive candidate valence.[9] There are two caveats regarding the underlying data. One, the platform has not provided users with the option of weighting the issues before calculating the policy distances. The model applied by the vote advice application therefore effectively assumes that every

[3] The information in this paragraph is partly based on personal communication with the curators of the platform.

[4] The calculation of the agreement scores relies on an unweighted proximity model (Wagner and Ruusuvirta 2012).

[5] Approximately 36,000 users of the *Kandidatencheck* also provided information on the supplemental questionnaire.

[6] As there were 24 items in the survey, the agreement scores could range between 0 and 24. Empirically, the differences range between 0 and 23.5; neutral selections were calculated as a difference of 0.5.

[7] I make the simplifying assumption that only the five competitors from the parties with a parliamentary representation at the time of the election are a viable alternative for the district vote. In reality, there are more nominal candidates from fringe parties and occasionally there are even non-party competitors. Voters that selected a fringe party competitor were discarded from the data set.

[8] I do not model additional socio-demographic indicators which are known to influence vote choices, e.g. denomination (Elff and Roßteutscher 2009; Ackermann and Traunmüller 2014), as the interest of this contribution is not the accuracy of the individual candidate selection, but rather the aggregate deviations from recommended vote choices. This is to say that voter-specific idiosyncracies are of little consequence as long as they do not systematically favor candidates from particular parties. To control for such factors, the model contains party-specific fixed effects. Moreover, I do not control for party proximity as an additional variable to potentially shape individual vote choices as candidates were supplied model responses from party headquarters to ensure a consistent party image. Therefore, candidate responses and party preferences are, on the whole, well aligned.

[9] Estimations were performed using version 0.3-1 of the mclogit package in R. A comprehensive introduction to the model is provided by Elff (2009).

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

agreement/disagreement is equally important, whereas in fact the influence of issues on vote choice might vary by voter. The effect of unweighted vote recommendations should be that voters more frequently select candidates who were not labeled as ideologically closest by the platform. By the same token, voters might have based their candidate selections on additional policy considerations if they were irritated by the vote recommendation. To be sure, the ideal solution for this imprecision in the estimates would have been to offer voters the possibility to weigh the issues. However, absent this state of affairs, it seems unlikely that making unweighted vote recommendations would greatly affect the valence estimates. First of all, the unweighted policy distances should be strongly related to the weighted policy distances, thus creating imprecision only in edge cases. What is more, it is plausible to assume that non-weighted recommendations do not systematically favor one candidate over another, i.e. if the estimated candidate valences were elevated, they would be elevated across the board. Put differently, it would be of greater concern if voters systematically considered aspects in their candidate selections that favored candidates from one party over those from another. For example, it is plausible that a subset of voters would be more inclined to select candidates from one of the two main parties, regardless of policy proximity. This effect should, however, be controlled for by the party-specific fixed effects.

A second concern regarding the underlying data is related to the non-random sample of vote advice application users. As Marschall (2014) shows in his contribution on the subject, there is clear evidence that users' socio-demographic statuses typically do not match the population baseline. The most concerning factor among the various deviations from the baseline is a higher average educational attainment (Marschall 2014, 100–1). It thus needs to be considered whether the self-selected user sample might bias the estimated candidate valences. Previous research has shown that better educated voters are more likely to take personal characteristics of candidates into account when making vote choices (Glass 1985; Lau 1986; Miller, Wattenberg and Malanchuk 1986). It can thus be assumed that more voters in the sample apply valence-based voting compared with an unbiased sample. However, as this contribution is interested in candidate-specific valences rather than individual vote choices, there is no reason to expect biases due to an over-educated sample as there is no fixed underlying metric of the valence estimates. More frequent valence voting, therefore, still generates systematic variation in the valence indicator.

There were 299 electoral districts in the German federal election of 2013. For the estimation of the indicator I drop all districts where one of the five competitors has not participated in the *Kandidatencheck* as voters need to be familiarized with the policy positions of all viable candidates in order for the argument to hold.[10] Despite a sample size of ~36,000 respondents, there is fairly little data for each electoral district. Consequently, I discard all districts with a coverage of fewer than 50 respondents overall. Both restrictions—a full candidate sample and at least 50 observations—limit the data set to 114 electoral districts and 570 nominal candidates.

Table 1 presents the estimates from the candidate selection model. In line with expectations, the policy distance is negatively and significantly associated with the individual vote choice. The party fixed effects are also highly significant and in line with prior expectations. The Christian Democrats (baseline) have the highest party valence, the Social Democrats a little less so, the three smaller parties are trailing behind. The majoritarian electoral system on the district tier generates a strong tendency for two parties—the CDU/CSU and SPD—to dominate the district vote. Even though Die Linke has won several East German electoral districts in recent

[10] The overall participation rate of candidates is ~90 percent, thus discarding districts with incomplete candidate coverage does not thin the data set dramatically. Nevertheless, the candidates are not missing at random. In particular, several high-ranking members of government are missing which might affect the results in Explaining Valence Advantages of German Candidates section.

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

TABLE 1 *Conditional Logit Model: Candidate Selection*

Distance	−0.228***
	(0.004)
SPD	−0.409***
	(0.061)
Grüne	−0.995***
	(0.063)
FDP	−1.611***
	(0.074)
Die Linke	−1.667***
	(0.066)
Observations	11,874
Deviance	27,947

Note: *p < 0.10, **p < 0.05, ***p < 0.01.

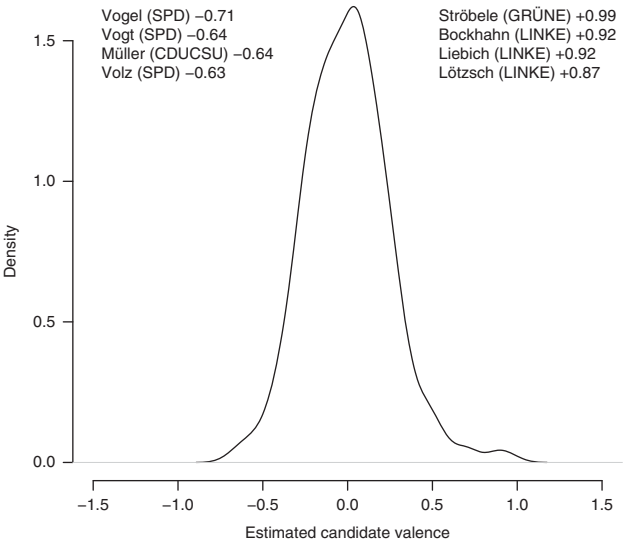


Fig. 1. Distribution of candidate valence parameters U_j from the Conditional Logit Model in Table 1. The candidates with the four highest and four lowest values are shown at the top of the figure.

years, this is not evident in the party fixed effects, possibly suggesting that the electoral results of successful Die Linke candidates are more strictly tied to candidate quality.

Figure 1 displays the distribution of the valence indicators—the candidate-specific random effects U_j. The candidates with the four highest and four lowest values are printed at the top of the figure. Both Stefan Liebich (Die Linke) and Gesine Lötzsch (Die Linke), party chairwoman in the years 2010–2012, have been able to win district mandates in previous electoral cycles—Lötzsch in the years 2002, 2005, and 2009, Liebich in 2009—despite their membership in one of the minor competing parties. Their successful nominal campaigns and the position of party chairwoman for Gesine Lötzsch suggest a valence surplus due to visibility that is reflected in the estimates and in their subsequent successful electoral bids in the federal election of 2013. Similarly, Steffen Bockhahn (Die Linke) was party chairman of the state-level party organization in *Mecklenburg-Vorpommern* in the years 2009–2012 and has won the mandate in the district *Rostock—Landkreis Rostock II* in the federal election of 2009. In addition,

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

Bockhahn was party chairman in the municipal council of Rostock. Therefore, despite coming in second in the race for the district mandate in 2013, he was nonetheless quite visible in the district which is plausibly echoed in a high valence indicator. Finally, Hans-Christian Ströbele (Grüne) has also won a nominal mandate since 2002 as the first and only candidate from Bündnis 90/Die Grünen, suggesting a similar high valence advantage for him.

Turning to the candidates with the lowest valence estimates, all four competitors have achieved electoral results in the bottom quartiles of their respective parties.[11] Among the four candidates, only Ute Vogt (SPD) was able to win a mandate for the *Bundestag* via the state-level party list. In fact, after a particularly poor showing during the previous federal election, where she came in third after the Christian Democrat and the Green candidate with a mere 18.0 percent of the district vote in *Stuttgart I*, she resigned from the position of state-level party chairwoman in *Baden-Württemberg*. The unusual state of affairs for a West German Social Democrat candidate to come in third continued in 2013 when Ute Vogt was placed third yet again with only 16.6 percent of the district vote. Götz Müller (CDU), the fourth candidate with a particularly low valence indicator also had a plausibly poor showing in his district where he scored an exceptionally low 13.7 percent of the votes. He was placed fourth, being surpassed by all three competitors from the left-wing parties. This fourth place is even more astounding as the 2013 federal election concluded with a comparatively strong result for the CDU due to the popularity of chancellor Merkel, which gave a boost to most Christian Democratic nominal candidates, prompting one news outlet to label Müller as "Merkel's loneliest fighter."[12] These first, unsystematic observations provide some indication that the estimated valence parameters do reflect the candidates' non-policy advantages and disadvantages.

It was argued that the visibility of candidates in the district and at the national stage should be positively related to the valence parameters. Regarding national visibility, candidate valence should increase if candidates have won the district mandate in the previous electoral cycle. Candidates can also increase their visibility and hence their valence by holding an office at the national stage. To capture this empirically, information on all governmental (*Minister* and *parlamentarische Staatssekretäre*) and parliamentary offices (*Parlamentspräsidium* and *Fraktionsvorstände*) was collected. As indicators of local candidate valence, the number of campaign events a candidate has attended were selected as well as the number of personal posters a candidate has put up. Both variables were gathered from self-reported information in the candidate survey that was conducted by the project "Making electoral democracy work" (Blais 2010).

Character valence is more challenging to capture. The best available indicators of character valence are the widely applied survey ratings of candidates' character traits (cf. Miller, Wattenberg and Malanchuk 1986; Funk 1996; Bartels 2002b; Hayes 2005). Such trait ratings are frequently collected for top candidates. However, as no ratings are available for the rank-and-file candidates that ran in the German electoral campaign of 2013, I rely on three structured variables instead that should be related to candidate character and perceptions of character valence. One aspect that features prominently in German candidates' self-presentation are academic titles. Most candidates with a PhD will display their title on campaign posters to indicate superior intelligence and competence (Manow and Flemming 2011). Accordingly, data on whether candidates have a PhD was collected. Moreover, information was assembled on the candidates' professions as indicated on the electoral ballot. As before, more prestigious professions might

[11] Ines Vogel (SPD) received 14.9 percent of the district votes in *Dresden I*, Ute Vogt (SPD) 16.6 percent in *Stuttgart I*, Götz Müller (CDU) 13.7 percent in *Berlin-Friedrichshain—Kreuzberg—Prenzlauer Berg Ost*, and Tobias Volz (SPD) 19.2 percent in *Konstanz*.

[12] http://www.sueddeutsche.de/politik/wahlkreis-atlas-merkels-einsamster-kaempfer-1.1744497 (March 7, 2015).

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

signal a greater electoral viability to voters. The information of the candidates' professions was systematized by the *Bundeswahlleiter*[13] and put into a structured scheme of professions. Based on this coding, all candidates were assigned a value of the job prestige that is associated with their profession (Frietsch and Wirth 2001). One final aspect of candidate quality that will be included in the analysis is physical attractiveness, which has consistently shown to be associated with candidate selections (Rosar and Klein 2005; Rosar and Klein 2013; Rosar and Klein 2014).[14] Table A1 in the Appendix provides summary statistics of the independent variables.

EXPLAINING VALENCE ADVANTAGES OF GERMAN CANDIDATES

The estimated valence indicator should be systematically associated with the proposed components of candidate valence. Table 2 presents the results from three ordinary least square models that regress the factors on the estimated valence parameters. Model 1 contains indicators of candidate visibility at the national stage—the candidates' incumbency status and whether or not candidates were office-holders in the previous electoral cycle. In line with expectations, the incumbency status is positively and significantly associated with the estimated candidate valence. The same is true for office-holders. The size of the office-holder variable is surprisingly small, however, which might be explained by missing observations in this variable. Some of the most well-known office-holders have not participated in the *Kandidatencheck*, such that several incumbent ministers are missing in the data set. Therefore, the office variable contains comparatively many office-holders with somewhat minor offices.

Model 2 considers indicators of local candidate visibility—the logged number of campaign events a candidate participated in as well as the logged number of personal campaign posters candidates had in their electoral districts.[15] Both variables are positively and significantly associated with the estimated candidate valence. The incumbency status is still positive in model 2, but no longer meets the ordinary criterion for statistical significance. Needless to say that particularly the number of personal campaign posters a candidate can put up is systematically related to the incumbency status of candidates.

Model 3 presents the estimates from a model that regresses candidate character aspects on the valence indicator, specifically whether or not candidates have a doctorate, their job prestige, and physical attractiveness. While the title variable is plausibly signed positive, there is no systematic evidence that either a doctorate or the candidates' job prestige is systematically related to the estimated candidate valence. Conversely and in line with previous research, the candidates' attractiveness is positively and significantly associated with the estimated valence indicator. Nonetheless, the model fails to explain much of the variation in the valence parameters. It thus needs to be concluded that—at least in the party-dominated German political system—candidate visibility is the more important condition for candidates to appear a viable electoral alternative to voters. Aspects of the candidate character, on the other hand, bear little relation to electability.

[13] The *Bundeswahlleiter* is the administrative head of the electoral process.

[14] I am grateful to Ulrich Rosar and Markus Klein for providing a data set of candidates' attractiveness during the 2013 federal election campaign. Incidentally, although physical attractiveness is a consistent non-policy factor in candidate selections, it is somewhat at odds with the two dimensions of valence proposed by Stone and Simas (2010). Nevertheless, it will be considered as an element of *character valence* here as physical attractiveness is a strictly personal attribute rather than a quality that stems from the campaign context.

[15] Note that the number of observations shrinks drastically due to missing observations in the anonymous candidate survey. The office-holder variable was discarded in model 2 due to an insufficient number of office-holders that have participated in the anonymous candidate survey.

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

TABLE 2 *Ordinary Least Square Regressions: Distance-Based Valence*

	(1)	(2)	(3)
	National	Local	Character
District incumbent	0.185***	0.112	
	(0.030)	(0.084)	
Office-holder	0.128***		
	(0.044)		
log(Campaign events)		0.046**	
		(0.021)	
log(Number of posters)		0.024***	
		(0.009)	
Doctorate			0.042
			(0.032)
Job prestige			−0.000
			(0.000)
Attractiveness			0.044***
			(0.013)
Constant	−0.118***	−0.433***	−0.073
	(0.030)	(0.121)	(0.055)
Observations	570	163	537
Adjusted R^2	0.061	0.092	0.012
Residual SE	0.243	0.234	0.250
F-statistic	7.156***	3.347***	1.903

Note: Party fixed effects not displayed.
*p < 0.10, **p < 0.05, ***p < 0.01.

TABLE 3 *Conditional Logit Model: Candidate Selection*

	(1)	(2)
Distance	−0.228***	−0.113***
	(0.004)	(0.004)
Feeling thermometer		0.351***
		(0.005)
SPD	−0.409***	−1.64***
	(0.061)	(0.051)
Grüne	−0.995***	−0.746***
	(0.063)	(0.054)
FDP	−1.611***	−1.111***
	(0.074)	(0.066)
Die Linke	−1.667***	−1.011***
	(0.066)	(0.058)
Observations	11,874	11,874
Deviance	27,947	22,430

Note: *p < 0.10, **p < 0.05, ***p < 0.01.

NON-PROXIMITY AND NON-PARTY PREFERENCES

To capture candidate valences, a model was estimated that explains individual prospective vote choices with the policy distance to the district candidates. The model contained party fixed effects to control for the party label. It is possible to go beyond this model specification and even control for voters' long-term party preferences. Table 3 presents the results from a model similar to the one proposed in A Comprehensive Measure of Candidate Valence section with the

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

addition of party feeling thermometers. The first model in the table is identical to the model in Table 1. It is reprinted for reference. Model 2 includes the feeling thermometers in addition to the policy distance and the party fixed effects. In line with expectations, there is a positive and highly significant association between the party feeling thermometer and the candidate selection, above and beyond the party fixed effects. Nevertheless, the estimated candidate valences in the two models are well aligned, as shown in the top left panel of Figure 2. The figure shows the candidate-specific random effects from models 1 (x-axis) and 2 (y-axis) in Table 3. Despite controlling for the party feeling thermometers in the latter model, the estimated candidate valences are close to the 45º line, suggesting no dependence of the estimates on whether or not the additional control variable is included.

So far, the spatial component of the vote choice was controlled for by employing the distance between the voter preferences and the candidates' policy profiles. One might argue that the theoretical account requires modeling the actual vote recommendation rather than the policy distance between candidates and voters. Therefore, a binary indicator was generated that is set to 1 if a candidate was recommended by the platform and 0 otherwise. The two models from the previous table were re-run, where the policy distance was replaced with the binary vote recommendation. Table 4 presents the results from this analysis. Again, there is a strong and positive effect of the vote recommendation on the candidate selection. Not surprisingly, the parameter estimate shrinks when the party feeling thermometer is added in model 2. Figure 2 displays the candidate random effects from the four models in all possible combinations.[16] There is a high agreement between the estimated candidate valences, regardless of the model specification. Thus, there is good evidence that the estimated parameters are not driven by the specific modeling choice.

CONCLUSION

Voters do not always choose the candidate or party that is ideologically closest to them. Scholars have provided ample evidence that non-policy factors such as the visibility, the perceived integrity, or decisiveness of candidates can tilt vote choices in favor of candidates that do not advocate the most compelling policy profile for individual voters. Despite the plausibility of the proposition and the evidence to back it up, it has proven difficult to capture candidates' valence advantages from voters directly in the form of surveys. On the one hand, this is due to the uncertainty regarding the awareness of voters of the candidates' policy profiles and to the well-known distortion effects in the minds of voters on the other.

This contribution has attempted to capture a comprehensive valence indicator of German candidates from data generated by a vote advice application. By making vote recommendations based on the overlap between individual policy preferences and the policy profile of district candidates, it was possible to take proximity out of the equation and to capture the valence advantages of candidates. I have provided evidence that the estimated valence indicator is associated with ordinary measures of candidate valence, particularly variables that increase the visibility of candidates are strongly associated with the proposed measure. Conversely, there is little indication that character valence is associated with the estimated candidate valence.

As a party-dominated political system, Germany is a least likely case for discovering character valence effects. Therefore, finding little systematic relation between the character

[16] The alternative are the pure distance model (Table 1), the distance model with feeling thermometer (model 2 in Table 3), the vote recommendation model (model 1 in Table 4), and the vote recommendation model with feeling thermometer (model 2 in Table 4).

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

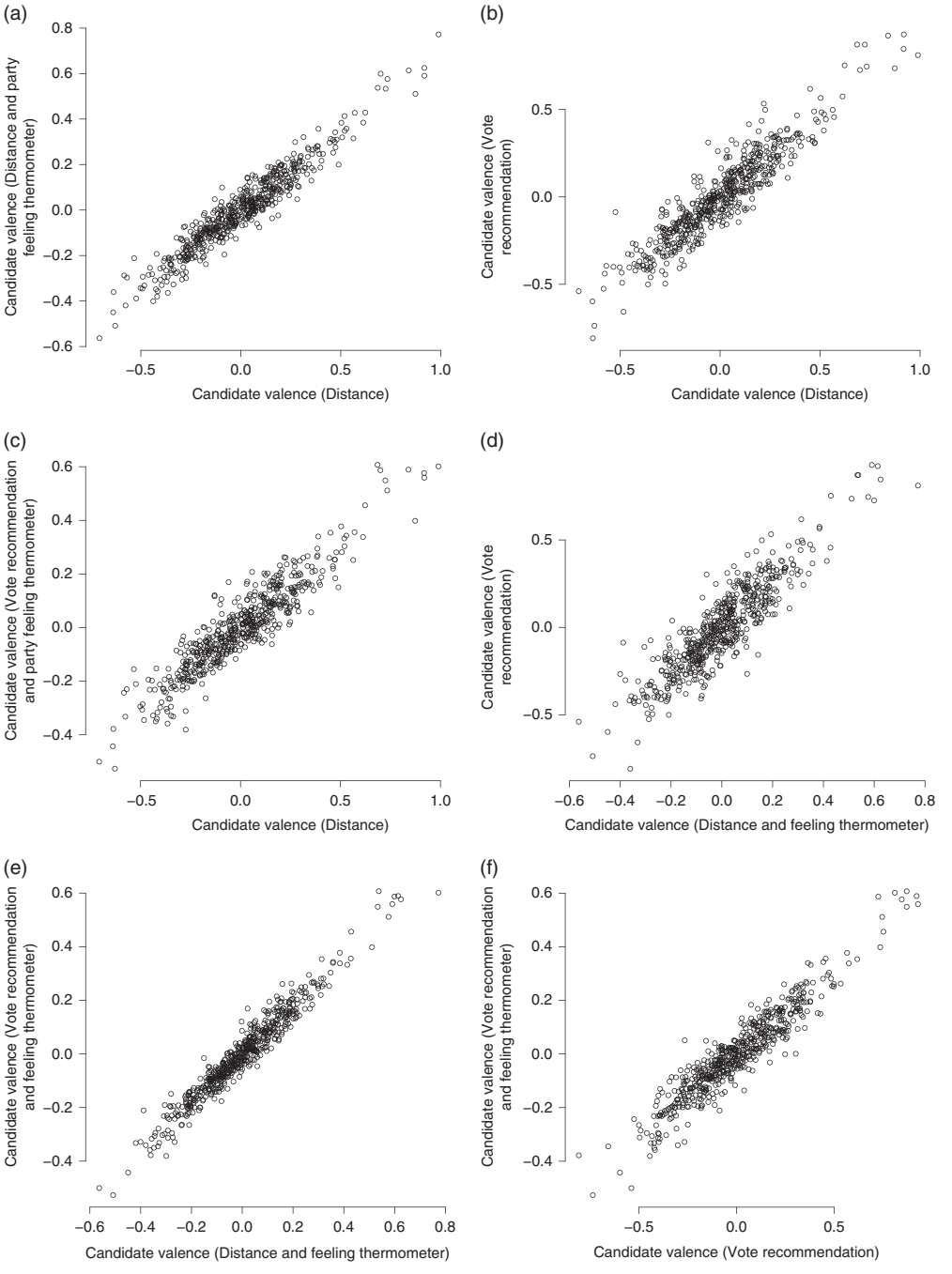


Fig. 2. Dependence of the estimated candidate valences on the various model specifications. The alternatives are the Pure Distance Model (Table 1), the Distance Model With Feeling Thermometer (model 2 in Table 3), the Vote Recommendation Model (model 1 in Table 4), and the Vote Recommendation Model With Feeling Thermometer (model 2 in Table 4). The valence estimates are stable across the various model specifications.

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

TABLE 4 *Conditional Logit Model: Candidate Selection*

	(1)	(2)
Distance	1.161***	0.637***
	(0.020)	(0.020)
Feeling thermometer		0.373***
		(0.005)
SPD	0.489***	0.244***
	(0.057)	(0.046)
Grüne	−0.013	−0.292***
	(0.058)	(0.048)
FDP	−1.553***	1.058***
	(0.072)	(0.640)
Die Linke	−0.683***	−0.522***
	(0.061)	(0.051)
Observations	11,874	11,874
Deviance	29,444	22,408

Note: *p < 0.10, **p < 0.05, ***p < 0.01.

valence factors and the comprehensive candidate valence indicator is strictly tied to the specific German electoral system with its strong non-majoritarian component—the mixed-member proportional system (Shugart and Wattenberg 2001; Gschwend, Johnston and Pattie 2003; Ferrara, Herron and Nishikawa 2005). The candidate as an independent political entity is of much greater importance in the US context where the valence concept originates. Consequently, the substantive results cannot generalize beyond the specific political system under investigation here. This is all the more true, as more candidate-centered electoral systems should engender a more systematic link between *character valence* and *campaign valence* (Stone and Simas 2010, 373), where candidates with a *character valence* advantage might be able to raise their *campaign valence*. What should generalize, however, is the technique for estimating candidate valences by explicitly supplying voters with information on the candidates' policy profiles. As vote advice applications are an increasingly common tool to help citizens make informed vote choices, scholars should take the opportunity to apply evidence from such tools in similar analyses to capture the non-spatial component of voting.

One upshot of this research program is a data set on the valences of German nominal candidates. The data are well suited to find applications beyond the substantive interest of the present contribution. For instance, several publications have recently considered the behavioral incentives of German candidates—both within the parliamentary assembly (Stratmann and Baur 2002; Sieberer 2010; Stoffel 2013; Sieberer 2015) and on the campaign trail (Wüst et al. 2006; Zittel and Gschwend 2008). It seems likely that a high valence advantage would affect position-taking in both cases as a higher valence translates to a greater electoral safety. Future research should strive to combine the research interests of these literatures and assess how the proposed valence parameters are related to candidate and MP behavior.

This article has considered prospective vote choices as an instrument for calculating the valence advantages of German candidates. One aspect that has not been covered is the question which voters are more likely to stray from the vote recommendations and to select candidates with a valence advantage. Future research could apply similar evidence to consider factors that increase the likelihood of valence voting. I would suggest that politically more sophisticated voters are more likely to disregard the vote recommendations for two reasons. One, more sophisticated voters have a better intuition of the valence advantages of candidates. It requires a

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

minimum amount of political sophistication to make the connection between candidates in an electoral race and their campaign appearances. Two, some previous research has shown that more sophisticated voters are more likely to take personal characteristics of candidates into account when casting their vote (Glass 1985; Lau 1986; Miller, Wattenberg and Malanchuk 1986; for an opposing point of view see Pierce 1993). Glass (1985) argues that sophisticated voters are aware that they cannot foresee the issues that will come up throughout the electoral cycle. Therefore, their best option is to select a candidate with commendable character traits which could be observed as higher levels of valence voting by political sophisticates.

REFERENCES

Ackermann, Kathrin, and Richard Traunmüller. 2014. 'Jenseits von Schwerkraft und Höllenfeuer: Nicht-lineare Kontexteffekte auf den Zusammenhang von religiöser Gruppenzugehörigkeit und individuellem Wahlverhalten bei fünf Bundestagswahlen'. *Politische Vierteljahresschrift* 55 (1):33–66.

Adams, James, and Samuel Merrill III. 2003. 'Voter Turnout and Candidate Strategies in American Elections'. *Journal of Politics* 65(1):161–89.

Adams, James, Samuel Merrill III, Elizabeth N. Simas, and Walter J. Stone. 2011. 'When Candidates Value Good Character. A Spatial Model with Applications to Congressional Elections'. *Journal of Politics* 73(1):17–30.

Ansolabehere, Stehen, and James M. Snyder Jr. 2000. 'Valence Politics and Equilibrium in Spatial Election Models'. *Public Choice* 103(3/4):327–36.

Aragones, Enriqueta. 2002. 'Mixed equilibrium in a Downsian model with a favoured candidate'. *Journal of Economic Theory* 103(1):131–61.

Aragones, Enriqueta, and Thomas R. Palfrey. 2004. 'The Effect of Candidate Quality on Electoral Equilibrium. An Experimental Study'. *American Political Science Review* 98(1):77–90.

Ashworth, Scott, and Ethan Bueno de Mesquita. 2009. 'Elections with Platform and Valence Competition'. *Games and Economic Behavior* 67(1):191–216.

Bartels, Larry M. 1988. *Presidential Primaries and the Dynamics of Public Choice*. Princeton, NJ: Princeton University Press.

Bartels, Larry M. 2002a, 'Beyond the Running Tally. Partisan Bias in Political Perceptions'. *Political Behavior* 24(2):117–50.

Bartels, Larry M. 2002b, 'The Impact of Candidate Traits in American Presidential Elections'. In Anthony King (ed.), *Leaders' Personalities and the Outcome of Democratic Elections*. 44–69. Oxford, Great Britain: Oxford University Press.

Bernhardt, Dan, Odilon Camara, and Francesco Squintani. 2011. 'Competence and Ideology'. *Review of Economic Studies* 78(2):487–522.

Berry, William D., Michael B. Berkman, and Stuart Schneiderman. 2000. 'Legislative Professionalism and Incumbent Reelection. The Development of Institutional Boundaries'. *American Political Science Review* 94(4):859–74.

Blais, André. 2010. 'Making Electoral Democracy Work'. *Electoral Studies* 29(1):169–70.

Bräuninger, Thomas, and Marc Debus. 2008. 'Der Einfluss von Koalitionsaussagen, programmatischen Standpunkten und der Bundespolitik auf die Regierungsbildung in den deutschen Ländern'. *Politische Vierteljahresschrift* 49(2):309–38.

Burden, Barry C. 2004. 'Candidate Positioning in US Congressional Elections'. *British Journal of Political Science* 34(2):211–27.

Buttice, Matthew K., and Walter J. Stone. 2012. 'Candidates Matter. Policy and Quality Differences in Congressional Elections'. *Journal of Politics* 74(3):870–87.

Cedroni, Lorella, and Diego Garzia (eds) 2010. *Voting Advice Applications in Europe. The State of the Art*. Naples, Italy: ScriptaWeb.

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

Clark, Michael. 2009. 'Valence and Electoral Outcomes in Western Europe, 1976–1998'. *Electoral Studies* 28(1):111–22.

Conover, Pamela J., and Stanley Feldman. 1986. 'The Role of Inference in the Perception of Political Candidates'. In Richard R. Lau and David O. Sears (eds), *Political Cognition*. 127–58. Hillsdale, MI: Lawrence Erlbaum Associates.

Cox, Gary W., and Johnathan N. Katz. 1996. 'Why Did the Incumbency Advantage in U.S. House Elections Grow?' *American Journal of Political Science* 40(2):478–97.

Downs, Anthony. 1957. *An Economic Theory of Democracy*. Cambridge, Great Britain: Cambridge University Press.

Elff, Martin. 2009. 'Social Divisions, Party Positions, and Electoral Behavior'. *Electoral Studies* 28(2):297–308.

Elff, Martin, and Sigrid Roßteutscher. 2009. 'Die Entwicklung Sozialer Konfliktlinien in den Wahlen von 1994 bis 2005'. In Oscar W. Gabriel, Bernhard Weßels and Jürgen W. Falter (eds), *Wahlen und Wähler. Analysen aus Anlass der Bundestagswahl 2005*. 307–25. Wiesbaden, Germany: VS Verlag für Sozialwissenschaften.

Ferrara, Federico, Erik S. Herron, and Misa Nishikawa. 2005. *Mixed Electoral Systems. Contamination and its Consequences*. New York, NY: Palgrave Macmillan.

Frietsch, Rainer, and Heike Wirth. 2001. 'Die Übertragung der Magnitude-Prestigeskala von Wegener auf die Klassifizierung der Berufe'. *ZUMA-Nachrichten* 48(25):139–63.

Funk, Carolyn L. 1996. 'The Impact of Scandal on Candidate Evaluations. An Experimental Test of the Role of Candidate Traits'. *Political Behavior* 18(1):1–24.

Glass, David P. 1985. 'Evaluating Presidential Candidates. Who Focuses on Their Personal Attributes?'. *Public Opinion Quarterly* 49(4):517–34.

Granberg, Donald, and Thad A. Brown. 1992. 'The Perception of Ideological Distance'. *Western Political Quarterly* 45(3):727–50.

Groseclose, Tim. 2001. 'A Model of Candidate Location When One Candidate has a Valence Advantage'. *American Journal of Political Science* 45(4):862–86.

Gschwend, Thomas, Ron Johnston, and Charles Pattie. 2003. 'Split-Ticket Patterns in Mixed-Member Proportional Election Systems. Estimates and Analyses of Their Spatial Variation at the German Federal Election, 1998'. *British Journal of Political Science* 33(1):109–27.

Hayes, Danny. 2005. 'Candidate Qualities Through a Partisan Lens. A Theory of Trait Ownership'. *American Journal of Political Science* 49(4):908–23.

Hogan, Robert E. 2008. 'Policy Responsiveness and Incumbent Reelection in State Legislatures'. *American Journal of Political Science* 52(4):858–73.

Hummel, Patrick. 2010. 'On the Nature of Equilibria in a Downsian Model with Candidate Valence'. *Games and Economic Behavior* 70(2):425–45.

Lau, Richard R. 1986. 'Political Schemata, Candidate Evaluations, and Voting Behavior'. In Richard R. Lau and David O. Sears (eds), *Political Cognition*. 95–126. Hillsdale, MI: Lawrence Earlbaum Associates.

Lau, Richard R., and David P. Redlawsk. 1997. 'Voting Correctly'. *American Political Science Review* 91(3):585–98.

Lau, Richard R., David Andersen, and David P. Redlawsk. 2008. 'An exploration of correct voting in recent U.S. Presidential elections'. *American Journal of Political Science* 52(2): 395–411.

Lebo, Matthew J., and Daniel Cassino. 2007. 'The Aggregated Consequences of Motivated Reasoning and the Dynamics of Partisan Presidential Approval'. *Political Psychology* 28(6):719–46.

Manow, Philip, and Peter Flemming. 2001. 'Der Titel Als Politisches Distinktionsmerkmal. Eine Untersuchung Akademischer und Adeliger Wahlbewerber Zum Deutschen Bundestag 1949–2009'. *Zeitschrift für Politikwissenschaft* 21(4):531–51.

Marschall, Stefan. 2014. 'Profiling Users'. In Diego Garzia and Stefan Marschall (eds), *Matching Voters with Parties and Candidates. Voting Advice Applications in a Comparative Perspective*. 93–104. Colchester, Great Britain: ECPR Press.

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

Merrill, Samuel III, Bernard Grofman, and James Adams. 2001. 'Assimilation and Contrast Effects in Voter Projections of Party Locations. Evidence from Norway, France, and the USA'. *European Journal of Political Research* 40(2):199–221.

Miller, Arthur H., Martin P. Wattenberg, and Oksana Malanchuk. 1986. 'Schematic Assessments of Presidential Candidates'. *American Political Science Review* 80(2):521–40.

Pappi, Franz U., and Jens Brandenburg. 2009. *Wähler im Politikraum Des Deutschen Parteiensystems 1980 bis 2005. Working Paper 124*. Mannheim, Germany: Mannheimer Zentrum für Europäische Sozialforschung.

Pierce, Patrick A. 1993. 'Political Sophistication and the Use of Candidate Traits in Candidate Evaluation'. *Political Psychology* 14(1):21–35.

Rattinger, Hans, Sigrid Roßteutscher, Rüdiger Schmitt-Beck, Bernhard Weßels, and Christof Wolf. 2014. 'Kandidatenstudie 2013, Befragung, Wahlergebnisse und Strukturdaten (GLES)'. GESIS Datenarchiv, ZA5716 Datenfile Version 2.0.0, Köln, Germany.

Rosar, Ulrich, and Markus Klein. 2005. 'Physische Attraktivität und Wahlerfolg. Eine empirische Analyse am Beispiel der Wahlkreiskandidaten bei der Bundestagswahl 2002'. *Politische Vierteljahresschrift* 46(2):263–87.

Rosar, Ulrich, and Markus Klein. 2013. 'Pretty Politicians. Die Physische Attrakvität von Spitzenkandidaten, ihr Einfluss bei Wahlen und die These der Personalisierung des Wahlverhaltens'. In Thorsten Faas, Kai Arzheimer, Sigrid Roßteutscher and Bernhard Weßels (eds), *Koalitionen, Kandidaten, Kommunikation. Analysen zur Bundestagswahl 2009*. 149–70. Wiesbaden, Germany: VS Verlag für Sozialwissenschaften.

Rosar, Ulrich, and Markus Klein. 2014. 'The Physical Attractiveness of Front-Runners and Electoral Success. An Empirical Analysis of the 2004 European Parliament Elections'. *Zeitschrift Für Vergleichende Politikwissenschaft* 8(2):197–209.

Saalfeld, Thomas. 2009. 'Germany: Stability and Strategy in a Mixed-Member Proportional System'. In Michael Gallagher and Paul Mitchell (eds), *The Politics of Electoral Systems*. 209–29. Oxford: Oxford University Press.

Schofield, Norman. 2003. 'Valence Competition in the Spatial Stochastic Model'. *Journal of Theoretical Politics* 15(4):371–83.

Schofield, Norman. 2004. 'Equilibrium in the Spatial "Valence" Model of Politics'. *Journal of Theoretical Politics* 16(4):447–81.

Schofield, Norman. 2007. 'The Mean Voter Theorem. Necessary and Sufficient Conditions for Convergent Equilibrium'. *Review of Economic Studies* 74(3):965–80.

Schultze, Martin, and Stefan Marschall. 2012. 'Voting Advice Applications and Their Effect on Voter Turnout. The Case of the German Wahl-O-Mat'. *International Journal of Electronic Governance* 5(3/4):349–66.

Serra, Gilles. 2010. 'Polarization of What? A Model of Elections with Endogenous Valence'. *Journal of Politics* 72(2):426–37.

Shugart, Matthew S., and Martin P. Wattenberg (eds) 2001. *Mixed-Member Electoral Systems. The Best of Both Worlds?* Oxford, Great Britain: Oxford University Press.

Sieberer, Ulrich. 2010. 'Behavioral Consequences of Mixed Electoral Systems. Deviating Voting Behavior of District and List MPs in the German Bundestag'. *Electoral Studies* 29(3):484–96.

Sieberer, Ulrich. 2015. 'Using MP Statements to Explain Voting Behavior in the German Bundestag. An Individual Level Test of the Competing Principals Theory'. *Party Politics* 21(2):284–94.

Stoffel, Michael. 2013. 'MPs with Competing Principals. A Theoretical and Empirical Contribution to the Study of Representation in Mixed-Member Electoral Systems'. Dissertation, University of Mannheim, Mannheim, Germany.

Stokes, Donald E. 1963. 'Spatial Models of Party Competition'. *American Political Science Review* 57(2):368–77.

Stokes, Donald E. 1992. 'Valence Politics'. In Dennis Kavanagh (ed.), *Electoral Politics*. 141–64. Oxford, Great Britain: Clarendon Press.

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press

Stone, Walter J., and Elizabeth N. Simas. 2010. 'Candidate Valence and Ideological Positions in U.S. House Elections'. *American Journal of Political Science* 54(2):371–88.

Stone, Walter J., Sarah A. Fulton, Cherie D. Maestas, and L. Sandy Maisel. 2010. 'Incumbency Reconsidered. Prospects, Strategic Retirement, and Incumbent Quality in U.S. House Elections'. *Journal of Politics* 72(1):178–90.

Stratmann, Thomas, and Martin Baur. 2002. 'Plurality Rule, Proportional Representation, and the German Bundestag. How Incentives to Pork-Barrel Differ Across Electoral Systems'. *American Journal of Political Science* 46(3):506–14.

Wagner, Markus, and Outi Ruusuvirta. 2012. 'Matching Voters to Parties. Voting Advice Applications and Models of Party Choice'. *Acta Politica* 47(4):400–22.

Wüst, Andreas W., Herrmann Schmitt, Thomas Gschwend, and Thomas Zittel. 2006. 'Candidates in the 2005 Bundestag Election. Mode of Candidacy, Campaigning and Issues'. *German Politics* 15(4):420–38.

Zittel, Thomas, and Thomas Gschwend. 2008. 'Individualised Constituency Campaigns in Mixed-Member Electoral Systems. Candidates in the 2005 German Elections'. *West European Politics* 31(5):978–1003.

APPENDIX

TABLE A1 *Summary Statistics of Independent Variables*

District incumbent		
Yes	94	0.16
No	476	0.84
Office-holder		
Yes	34	0.06
No	536	0.94
log(Campaign events)		
Mean	5.25	
SD	2.54	
Minimum	0	
Maximum	8.70	
log(Personal campaign posters)		
Mean	3.72	
SD	1.06	
Minimum	0	
Maximum	6.91	
Doctorate		
Yes	75	0.13
No	495	0.87
Job prestige		
Mean	95.80	
SD	22.68	
Minimum	33.73	
Maximum	188.35	
Candidate attractiveness		
Mean	1.95	
SD	0.89	
Minimum	0.21	
Maximum	5.33	

https://doi.org/10.1017/psrm.2016.7 Published online by Cambridge University Press