

This appendix document contains supplementary information for

**How open lists undermine the electoral support
of cohesive parties**

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Appendices

Appendix A Additional Information on Research Design

A1 Descriptive statistics

Table A1 reports means, standard deviations and ranges for all variables used in the analyses and the balance tests.

Variable	Scale/Level	N	Mean	SD	Min	Max
Age		6600	47.6	15.7	19	95
Education	Low	6600	0.36	0.48	0	1
Education	Medium	6600	0.31	0.46	0	1
Education	High	6600	0.33	0.47	0	1
Employment	Employed	6600	0.56	0.50	0	1
Income	15 levels	6600	7.35	3.32	1	15
Gender	Female	6600	0.50	0.50	0	1
Political Interest	5 levels	6600	3.33	1.06	1	5
Region	West	6600	0.63	0.48	0	1
Region	East	6600	0.22	0.41	0	1
Region	Bavaria	6600	0.15	0.35	0	1
Immigration	11 levels	6600	6.44	2.98	0	10

Table A1: Descriptive statistics

Figure A1 shows the distribution of immigration attitudes among survey respondents. A mean value of 6.4 on a scale from 0 to 10 indicates that the average respondent in the sample is immigration-skeptic. More than 1500 out of 6600 respondents are extremely immigration-skeptic at the modal value of 10.

By analogy with Figure 4, Figure A2 reports the share of respondents indifferent between the Greens and the Social Democratic Party. While a substantial share of respondents is indifferent between both parties across all immigration positions (approximately 20%), the distribution peaks at the immigration-friendly end of the scale.

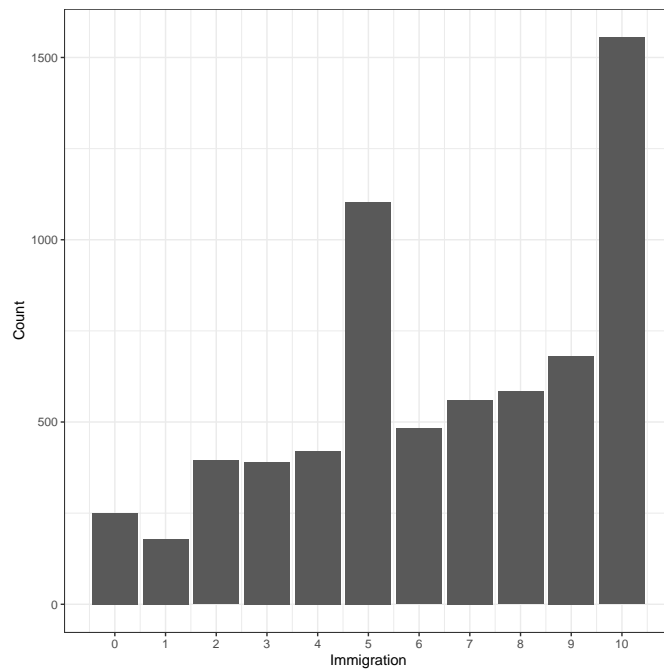


Figure A1: Distribution of immigration attitudes

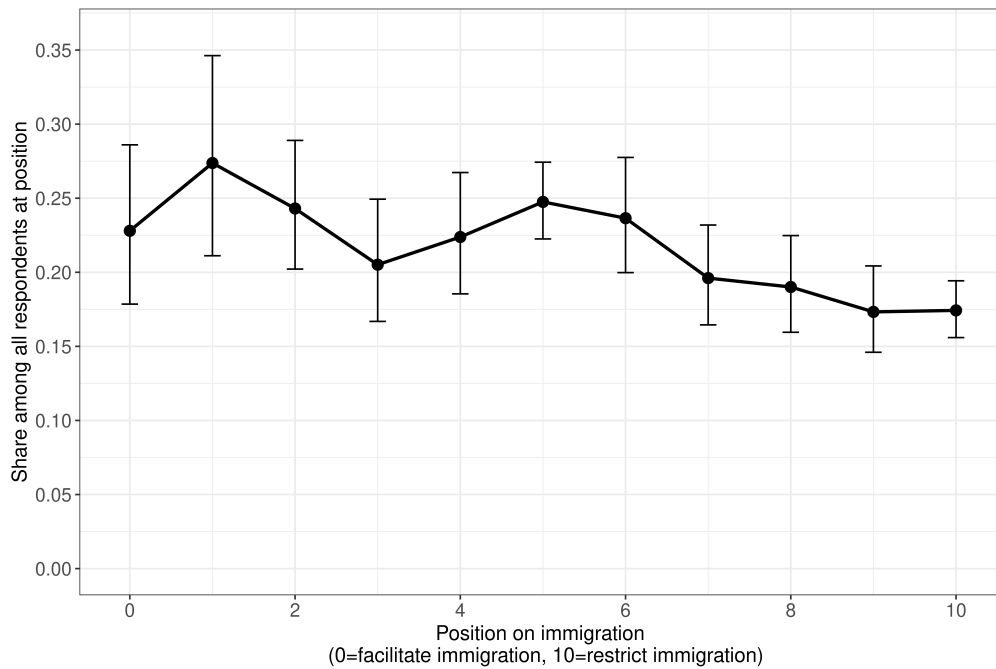


Figure A2: Share of respondents indifferent between SPD and Greens, by self-reported immigration position.

A2 Operationalization of immigration policy

We operationalize immigration policy using a concrete issue, family reunion of refugees, that was debated at the time the experiment was fielded. We asked respondents whether they are for or against the family reunion for refugees (on an 11-point scale), i.e. whether it should be made easier or more difficult for refugees to bring close family members to Germany. Candidates on the ballot were displayed as being either for or against family reunion.

This specific policy question correlates substantially with other asylum seeker policies (European Social Survey, 2016, Wave 8, German respondents, see ESS (2016)), and also the immigration policy stance of respondents more generally (see Table A2). A factor analysis of these items suggests that all these policies represent a single policy dimension (based on the Kaiser criterion and a scree plot) and that the family unification item loads high on this factor (factor loading of 0.681). From this, we conclude that the experiment captures voters' response to the communication of immigration policy positions of candidates more broadly.

Table A2: Correlations of family unification policy stance with other, more general refugee and immigration policies, and factor loadings of these issues on an “immigration policy dimension”, ESS 2016 data

	rho	count	loading on common factor
Granted refugees should be entitled to bring close family members (scale 1-5)	1.00		0.681
Refugees should have employment permit during application process (scale 1-5)	.269***	2827	0.396
Refugees should stay in reception camp during application process (scale 1-5)	-.322***	2827	-0.494
Refugees should get financial support during applications (scale 1-5)	.368***	2827	0.570
Government should be generous judging applications for refugee status (scale 1-5)	.418***	2819	0.640
Immigration bad or good for country's economy (scale 0-10)	-.404***	2799	-0.730
Country's cultural life undermined or enriched by immigrants (scale 0-10)	-.448***	2810	-0.782
Immigrants make country worse or better place to live (scale 0-10)	-.482***	2806	-0.823
Allow many/few immigrants of same race/ethnic group as majority (scale 1-4)	.392***	2803	0.670
Allow many/few immigrants of different race/ethnic group from majority (scale 1-4)	.462***	2795	0.803
Allow many/few immigrants from poorer countries outside Europe (scale 1-4)	.447***	2794	0.751
Observations		2852	2728

Correlation of family unification item of ESS (2016), German respondents (“Granted refugees should be entitled to bring close family members”, 5-point-Likert-scale response) with other asylum seeker and refugee related policy questions. Last column depicts factor loadings of these items on the first factor (eigenvalue 5.07, proportion of variance explained 0.461) of a factor analysis (principal-component factors), where the extraction of a singular factor is indicated based on the Kaiser-criterion (minimum eigenvalue 1.0) and a scree plot. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Appendix B Additional Information on Experimental Setup

B1 External validity

Intercepts of the OLS model in Table 1 in the main text (i.e. vote shares in the closed-list, no information treatment that mirrors the real election ballot) indicate that the CDU/CSU would garner approximately 23% of the votes, AfD 19%, Greens and SPD 18%, the Left and the FDP 13% and 9%, respectively. On 24 January 2019, a regular German opinion poll saw CDU/CSU at 28%, SPD at 15%, AfD at 15%, Greens at 20%, FDP at 9%, Left at 8%, and other parties at 5% (survey by Infratest dimap with 1,051 respondents, dual frame and CATI, see <https://www.wahlrecht.de/umfragen/dimap.htm>). Note that we only allowed voters to voice preferences for one of the six parties represented in parliament so that our estimates are somewhat higher than those in the poll. Assuming a margin of error of around 3 percentage points, CDU/CSU voters are slightly underrepresented in our survey. Overall, there are no strong reasons to believe that the results from the survey experiment cannot be generalized to the German population.

B2 Treatment design

To mimic respondents' choice in a closed-list PR vs. open-list PR electoral system, we displayed a vertically ordered list of parties and candidates within parties. In the closed-list condition, respondents had to vote for one of the party lists. In the open-list condition, respondents had to select a single candidate within one party. In the introduction to the closed-list setting, respondents were informed that all seats the party gains are assigned to candidates based on their list rank, whereas in the open-list setting they were told that seats are assigned based on within-party candidate vote shares.

In addition, we varied whether respondents received information or not—whether or not they were informed on a specific immigration policy issue and the issue positions of all candidates on the ballot (see section A2 in the Appendix). In our design, candidates supported either more lenient or more strict handling of family reunification compared to the actual status quo. Respondents were informed that, as of the time of fielding the survey, up to 1,000 family reunifications per month for all refugees with subsidiary protection were allowed in Germany. We chose this as a salient issue in immigration politics, as at the time there was an ongoing debate about the issue in the German Bundestag. It thus seemed plausible that candidates would state their views on this topic during a campaign. Following our argument, we varied whether parties were internally divided on the issue. For four parties (CDU/CSU, SPD, FDP, Left), we ensured that their lists contained two candidates who supported more strict position, and two candidates who supported more lenient positions on family reunification. This split approximates the actual distribution of opinions within the parties. While the share of proponents and opponents of extending family reunifications might vary by party, neither position was marginalized. For the AfD, we presented all candidates as having a more restrictive position than the status quo. We mimicked this procedure for the Greens and presented all candidates as more lenient than the status quo. On the ballot, the information was then randomly placed next to the name in brackets (see Figure 5 in the main text).

A fifth treatment group received an emphasis frame (Druckman 2001). Respondents voted under open ballot and with information on candidate positions concerning immigration, i.e., identical to the fourth group. The emphasis frame contained additional information on how parties operate under open lists. It specifically highlighted that political parties will consider the electoral performance of individual candidates in their future policy decisions.

Within each treatment condition, respondents were asked to cast a vote in a hypo-

thetical election for the German Bundestag. We explicitly asked for the list-PR vote (so-called *Zweitstimme*) in the German two-tier mixed-member system. All respondents were asked to pick *one* party or, in the open-list treatment, *one* candidate. Vote choice is our dependent variable.

Table A3: Overview of treatment condition

Treatment group	1	2	3	4	5
Ballot structure	Closed	Closed	Open	Open	Open
Information on candidate positions	No	Yes	No	Yes	Yes
Emphasis frame on party strategy in open lists	No	No	No	No	Yes
Percentage of sample	20	20	20	20	20

The design allows to assess differences in the aggregate voting patterns across treatment groups. To elicit individual level changes, respondents received a second round of the above described experiment. In the second round, we kept the level of information constant and varied the electoral system: Individuals in treatment groups 1 and 2 (see Table A3) received an open-list ballot in the second round, individuals in treatment groups 3 to 5 received a closed-list ballot.

B3 Balance tests

We made sure that randomization worked properly. Tables A4, A5, and A6 provide balance tests. Table A4 shows that there is no systematic difference in any of our covariates by treatment but age. In other words, there is no systematic difference in gender, education, employment, income, or region, whereas individuals receiving information were slightly younger (1.5 years) than individuals receiving no information. Additionally, we checked whether our p -values follow a uniform distribution, which they do.

(Figure A3). Given that randomization worked satisfactorily, we present experimental results without a control for covariates. This comes with the advantage that the intercept directly provides a measure of a party's vote share in the control condition (closed list without information).

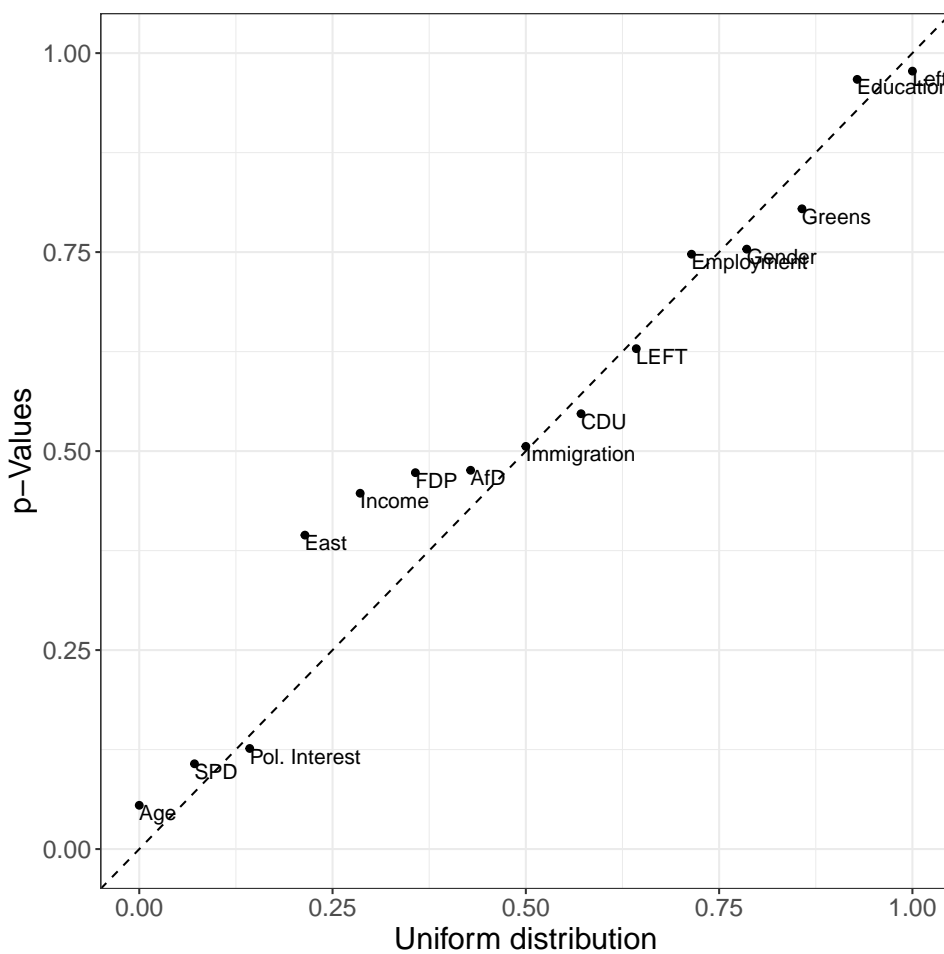


Figure A3: Quantile-quantile plot of empirical distribution of p-values against uniform distribution. The labels of each point refer to the dependent variable of the analyses.

	Age	Gender	Education	Employment	Income	Region = East
(Intercept)	48.08*** (0.43)	0.51*** (0.01)	0.36*** (0.01)	0.55*** (0.01)	7.45*** (0.10)	0.23*** (0.01)
Open List	-0.01 (0.61)	0.00 (0.02)	-0.01 (0.02)	0.01 (0.02)	-0.08 (0.13)	-0.01 (0.02)
Information	-1.45* (0.61)	-0.00 (0.02)	-0.01 (0.02)	0.01 (0.02)	-0.22 (0.13)	-0.00 (0.02)
Open List x Information	1.17 (0.86)	-0.02 (0.03)	0.00 (0.03)	-0.00 (0.03)	0.19 (0.19)	-0.01 (0.02)
Adj. R ²	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Num. obs.	5281	5281	5281	5281	4861	5281

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table A4: Balance test: Demographics

	CDU/CSU	SPD	AfD	Greens	FDP	Left
(Intercept)	4.17*** (0.08)	4.22*** (0.08)	2.24*** (0.09)	4.19*** (0.08)	3.46*** (0.07)	3.48*** (0.08)
Open List	-0.15 (0.11)	-0.23* (0.11)	-0.08 (0.12)	-0.08 (0.12)	-0.13 (0.10)	-0.12 (0.11)
Information	-0.01 (0.11)	-0.00 (0.11)	-0.13 (0.12)	-0.04 (0.12)	-0.02 (0.10)	-0.05 (0.11)
Open List x Information	0.13 (0.16)	0.19 (0.15)	0.26 (0.18)	0.02 (0.17)	0.16 (0.14)	0.19 (0.16)
Adj. R ²	-0.00	0.00	-0.00	-0.00	-0.00	-0.00
Num. obs.	5281	5281	5281	5281	5281	5281

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table A5: Balance test: Scalometer

	Immigration	Left-Right Self-Placement	Political Interest
(Intercept)	6.36*** (0.08)	4.63*** (0.06)	3.31*** (0.03)
Open List	0.03 (0.12)	-0.01 (0.08)	0.04 (0.04)
Information	0.17 (0.12)	-0.02 (0.08)	-0.02 (0.04)
Open List x Information	-0.12 (0.16)	-0.01 (0.12)	0.05 (0.06)
Adj. R ²	-0.00	-0.00	0.00
Num. obs.	5281	5281	5281

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table A6: Balance test: Political variables

Appendix C Additional Information and Analysis for Results Section

This section accompanies the results section of the main paper. It provides additional interpretation of results and supporting information.

C1 Effect of list type and information: Aggregate vote shares

We compare average party support between four treatment conditions. With binary vote choice as the dependent variable, Table 1 in the main text provide estimates of the effect of *Open Lists* (vs. closed), of *Information* on candidates' policy position regarding migration (vs. no information), and of the interaction between both treatments on party vote shares. To facilitate the interpretation of Table 1, we present predicted vote shares of cohesive parties (i.e. model in column 1) by ballot type and information in Figure A4. As can be seen, the combined vote share of cohesive parties increases under closed lists with information treatment (from 37.5% to 39.8%) but decreases under open lists with the information treatment (from 35.2% to 30.3%). The difference in these differences amounts to the effect of the combined open list with information treatment of 7.2%.

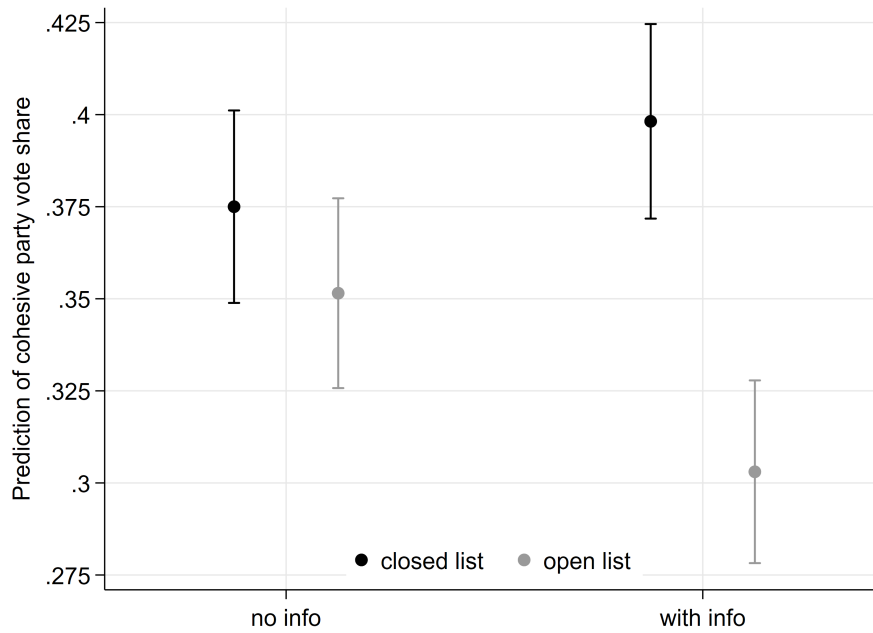


Figure A4: Vote shares for cohesive parties under open/closed lists with/without information based on the OLS regression of Table 1 in the main text.

As a robustness test, we reran the analysis presented in Table 1 using multinomial logistic regression (Table A7). Voting for the AfD serves as reference category. The positive and significant coefficient of the interaction term for CDU/CSU suggests that, given information, the CDU/CSU profits from the open list ballot type at the expense of the AfD. Additionally, the negative coefficients for information reflect the strong positive effect of information on AfD vote choice, as demonstrated by Table 1.

	CDU/CSU	Left	FDP	Greens	SPD
(Intercept)	0.16 (0.09)	-0.35*** (0.10)	-0.79*** (0.11)	-0.04 (0.09)	-0.08 (0.09)
Open List	-0.02 (0.12)	0.15 (0.14)	0.18 (0.16)	-0.01 (0.13)	0.15 (0.13)
Information	-0.35** (0.12)	-0.27* (0.14)	-0.22 (0.16)	-0.36** (0.13)	-0.16 (0.12)
Open List x Information	0.51** (0.17)	0.34 (0.19)	0.26 (0.22)	0.08 (0.19)	0.23 (0.18)
AIC	18569.76	18569.76	18569.76	18569.76	18569.76
BIC	18701.19	18701.19	18701.19	18701.19	18701.19
Log Likelihood	-9264.88	-9264.88	-9264.88	-9264.88	-9264.88
Deviance	18529.76	18529.76	18529.76	18529.76	18529.76
Num. obs.	5281	5281	5281	5281	5281

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table A7: Effects of ballot type and information. Coefficients estimated from a multinomial logistic regression of ballot type (open vs. closed list), provision of information (yes vs. no) and its interaction on party choice (binary indicator whether party in model header is voted for). Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

C2 Effect of list type and information: Voter transitions

Analyses presented in the main text support the argument that closed-list voters of cohesive parties switch to heterogeneous parties in an open-list setting.

To rule out experimenter demand effects (Mummolo and Peterson 2019), that is individuals who receive treatment 2 in the first iteration *infer* how to react to the information in treatment 4, we present results for the converse vote transition from open to closed lists (with information), assuming that demand effects are not as strong in this case (this is because respondents are in an unacquainted scenario first, where they can freely decide based on party and candidate preferences, and make their choice under a familiar federal-election related closed-list setting next). The overall findings (Table A5) look remarkably similar; although some effects are somewhat weaker. Additionally, baseline transition rates (for the case of no information) are slightly higher below, potentially because the

open-list scenario is not familiar to voters.

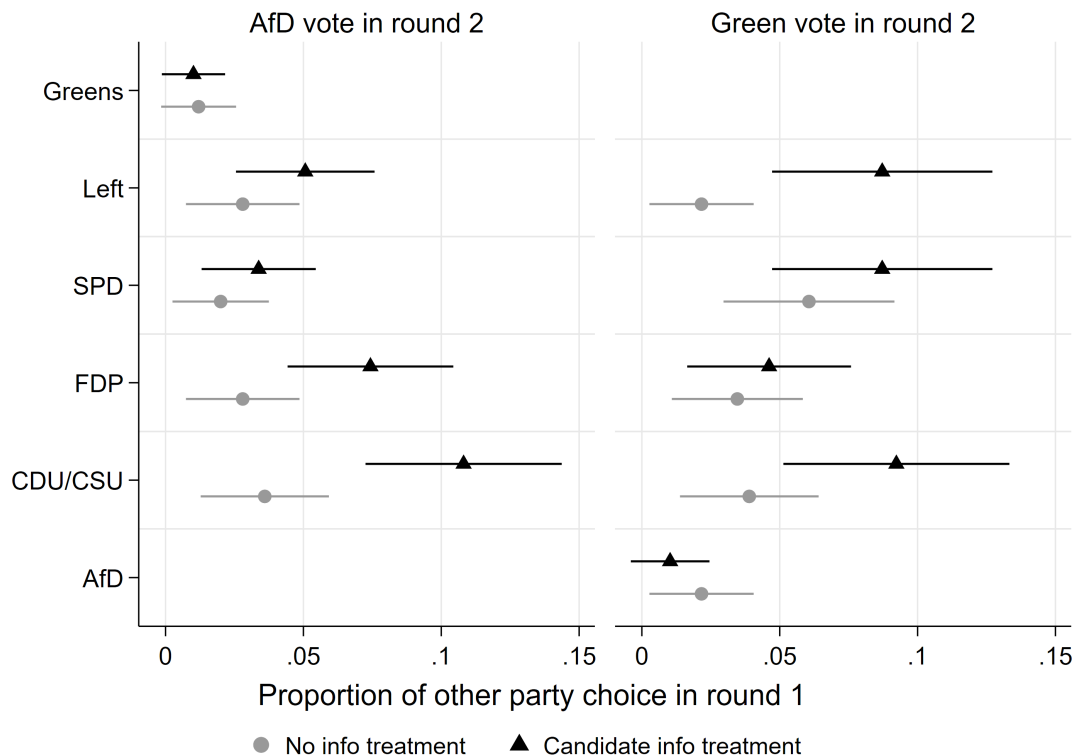


Figure A5: Within-respondent analysis for voters of cohesive parties (AfD, left panel; Greens, right panel) in round 1 by information treatment (no: dots; yes: triangles) when voting in an open-list setting first, and in a closed-list setting second. Coefficients show the share of cohesive-party supporters in round 1 (with open lists) who transition to another party in round 2 (with closed lists).

Finally, we provide additional descriptive evidence on the aggregate changes in vote shares between two rounds by treatment condition (see Table A8). The results for the AfD (first four rows) match well with the aggregate effect of the “open list \times information”-treatment presented in Table 1 for the AfD of approximately -6 (only drawing on the first round results). The findings for the Greens match Table 1 well again. In this case, the interaction term in Table 1 is -2.03 . Taken together, we conclude from these analyses that demand effects are not likely to drive the central results we derive from the

Party	List type change	Information	R1	R2	R1-R2
AfD	Closed → Open	No	19.17	19.32	-0.15
	Open → Close	No	18.03	18.94	-0.91
	Closed → Open	Yes	23.92	18.62	5.30
	Open → Closed	Yes	17.65	22.42	-4.77
Greens	Closed → Open	No	18.33	18.18	0.15
	Open → Closed	No	17.12	17.50	-0.38
	Closed → Open	Yes	15.90	14.31	1.59
	Open → Closed	Yes	12.65	14.77	-2.12

Table A8: Changes in vote shares of AfD and Greens between round 1 (R1) and round 2 (R2) by treatment

comparison of round 1 and round 2.

C3 Effect of list type and information: Emphasis frame

Hypothesis 2 states that the interaction effect (of ballot type and information) is larger when voters more strongly associate candidate choice with effects on party positions. Pointing this out to respondents will then affect their expectations about a change in party position and, consequently, who they vote for. In a fifth treatment condition, we therefore insinuated that political parties consider the electoral performance of MPs in their decisions on the party line. In Table A9, we directly compare respondents in the open-list information treatment to those who received the same treatment and additional information on potential strategic considerations. The additional emphasis of these considerations does not affect how respondents vote. In other words, this treatment does not significantly shift vote choice for any party above and beyond the open list/information effect, at least not at a statistically discernible level for our sample.

This could suggest that voters are already well aware of the effect dissenting MPs can have on the party line. However, the finding would also be consistent with the argument that voters have more expressive motivations: They are inclined to vote for candidates who represent their preferences on immigration.

	Cohesive Parties	Greens	Left	SPD	FDP	CDU/CSU	AfD
(Intercept)	0.30*** (0.01)	0.13*** (0.01)	0.15*** (0.01)	0.20*** (0.01)	0.10*** (0.01)	0.24*** (0.01)	0.18*** (0.01)
Open Info+	-0.00 (0.02)	-0.01 (0.01)	0.01 (0.01)	0.01 (0.02)	0.00 (0.01)	-0.02 (0.02)	0.01 (0.01)
Num. obs.	2639	2639	2639	2639	2639	2639	2639

Table A9: Effect of emphasis frame. Estimates draw on subsample of respondents receiving both the open list and information treatment, where 50% also received an emphasis frame. Coefficients estimated from a linear regression of the emphasis frame indicator (yes vs. no) on party choice (binary indicator whether party in model header is voted for). Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

One may ask whether the emphasis treatment has no effect because some respondents did not spend enough time on the page. We evaluate the argument as follows: We use the time respondents spend on the general information page as a proxy for attentiveness and interact it with the emphasis treatment. We again compare this to the open list \times information treatment. Table A10 indicates the absence of an interaction effect. Thus even respondents who spend considerable time reading the additional information are not more likely to change their behaviour when facing the additional information. In any case, there is no support for Hypothesis 2.

	Cohesive			By Party			
	Parties	Greens	Left	SPD	FDP	CDU/CSU	AfD
(Intercept)	0.30*** (0.01)	0.12*** (0.01)	0.15*** (0.01)	0.21*** (0.01)	0.10*** (0.01)	0.24*** (0.01)	0.18*** (0.01)
Open Info+	-0.00 (0.02)	0.00 (0.01)	0.01 (0.01)	0.00 (0.02)	0.00 (0.01)	-0.01 (0.02)	-0.00 (0.02)
Time on information page	-0.00 (0.01)	0.01* (0.00)	0.00 (0.00)	-0.00 (0.01)	-0.00 (0.00)	0.00 (0.01)	-0.01 (0.01)
Open Info+ × Time	-0.00 (0.01)	-0.01* (0.00)	-0.00 (0.00)	0.01 (0.01)	0.00 (0.00)	-0.00 (0.01)	0.01 (0.01)
Num. obs.	2639	2639	2639	2639	2639	2639	2639

Table A10: Effect of emphasis frame interacted with time. Estimates draw on subsample of respondents receiving both the open list and information treatment where 50% also received an emphasis frame. Coefficients estimated from a linear regression of the emphasis frame indicator (yes vs. no) on party choice (binary indicator whether party in model header is voted for). Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

C4 Effect of list type and information by self-stated immigration position

In the group of voters who find a cohesive party and some other party similarly attractive for reasons other than their stance on immigration policy ($v_{ij} = v_{ik}$), we expect to see the largest shift in vote choice among those who are close to the midpoint of the immigration positions of their top-ranked parties. We investigate whether this is actually the case for the AfD in the main text (cp. Figure 7). Here, we focus on the Greens.

Figure A6 presents the corresponding results for the Greens. The line plot in the upper panel shows the number of respondents indifferent between the Greens and any other party across their self-placement on the immigration scale, given information. The bar plot demonstrates that the majority of voters of the Greens are placed towards the immigration-friendly (left) side of the immigration scale. The lower panel depicts the change in proportions of the vote share for the Greens between open and closed lists. We see some tentative evidence for list type at the highly immigration-friendly end of

the scale although the difference-in-proportions test fails to reach conventional levels of significance.

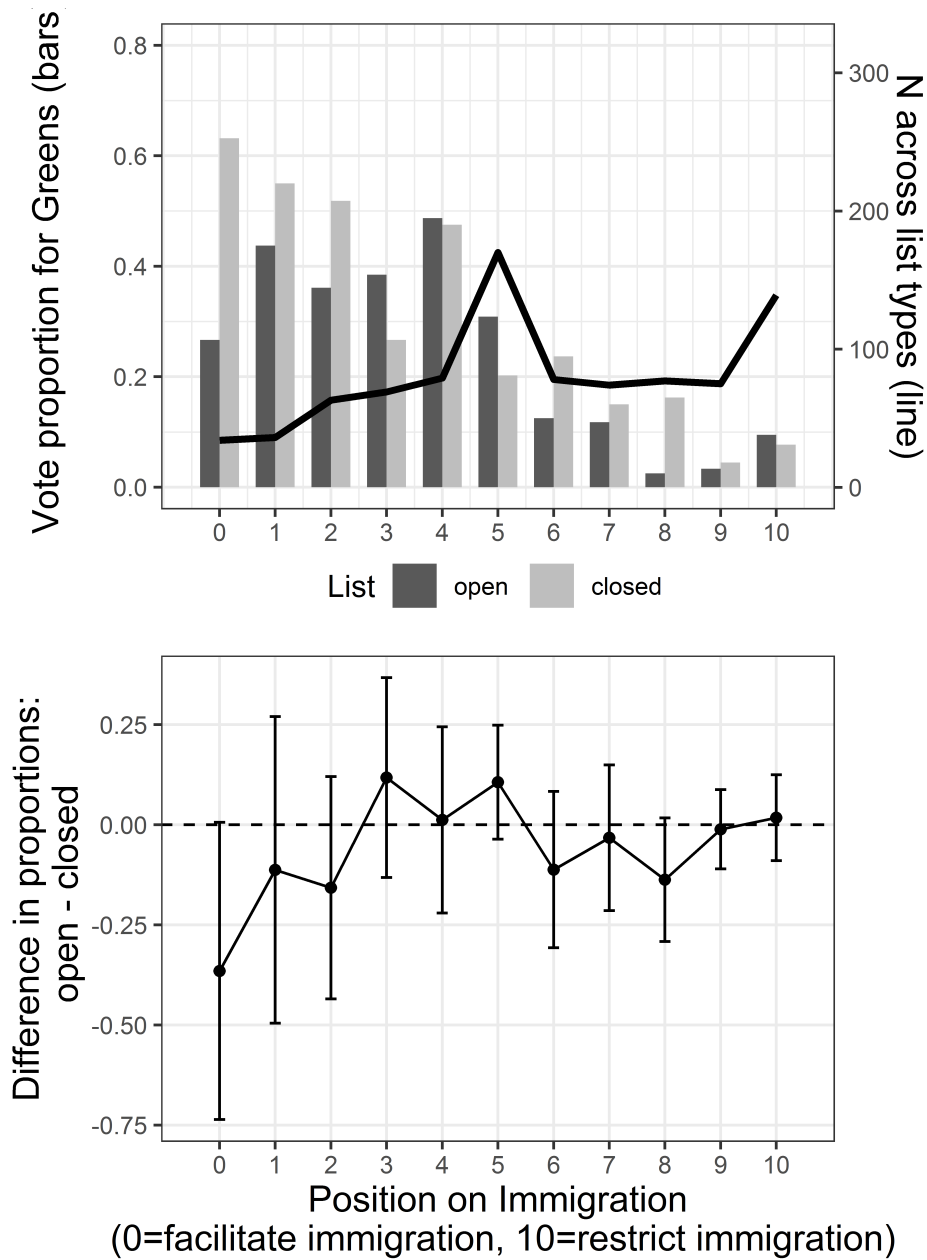


Figure A6: Treatment effects for individuals who are indifferent between Greens and some other party by immigration position (experimental groups with information, only). In the upper panel, the bars show the proportion of indifferent individuals voting for the Greens by list type; the blue line represents the total number of indifferent individuals at each scale point. The lower panel displays differences in proportions between open and closed list with 95% confidence intervals (χ^2 test).

Appendix D Homogeneity of European Parties on Immigration Issue by List Type

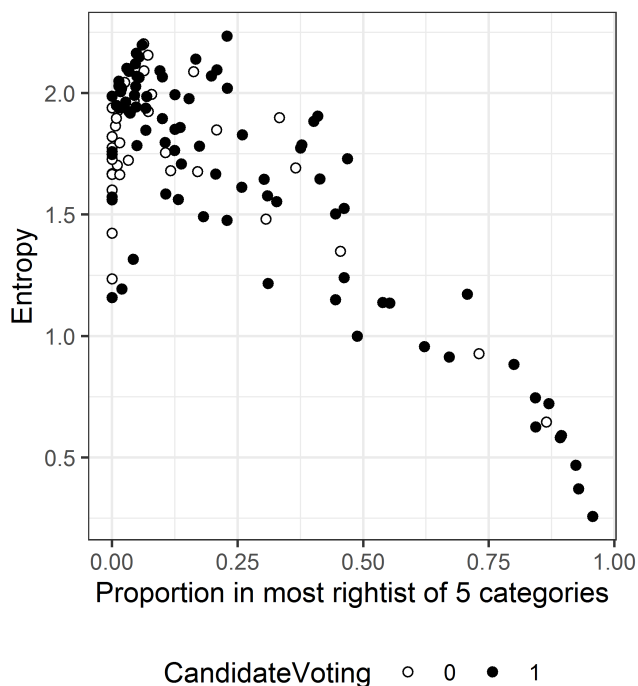


Figure A7: Right-wing orientation and homogeneity of parties by list type using CCS data. Shown are parties from established European democracies (excluding Albania and Montenegro). In mixed member systems, constituency-only candidates are left out. Elections with closed lists: Germany 2013, 2017; Norway 2013; Portugal 2015; Spain 2016. Elections with candidate voting: Belgium 2014; Czech Republic 2017; Estonia 2015; Finland 2015; Greece 2015; Iceland 2013, 2016, 2017; Sweden 2014; Switzerland 2015.

Figure A7 is based on data from the second wave of the Comparative Candidate Survey (CCS 2020). We focus on established European democracies, where questions of immigration play a similar role. Candidates were asked whether they agree with the statement that “Immigrants should be required to adapt to the customs of [country]”. This statement is well-suited to capture socio-cultural aspects of immigration. The figure shows, for party–election units, the proportion of candidates who strongly agree with the

statement (x-axis) as a measure of rightist orientation and entropy (to avoid assumptions about the measurement level) as an indicator of intra-party homogeneity on this issue (y-axis).

It can be seen that there are many examples of very cohesive right-wing parties from countries with candidate voting. The cases in the bottom-right corner (with more than three out of four candidates strongly agreeing, and entropy below one) are (in ascending order of agreement): Sweden Democrats, Swiss People’s Party, Estonian Conservative People’s Party, Alternative for Germany, Communist Party of Bohemia and Moravia, Civic Democratic Party (Czech Republic), Swiss Democrats, Flemish Interest, The Finns, and the Popular Party (Belgium). In fact, nine out of these ten parties are from countries that allow voters to express preferences for candidates.

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