Backlash and Second-Preference Boost Effects: The Impact of Negative Campaigning on Voters' Electoral Preferences in a Multi-Party Context
Online Appendix

This online appendix comprises the following information that is referred to in the main article:

A1: Analyses of the effect of negative campaigning on electoral participation
A2: Details of the analysis design
A3: Details of demographic and socio-economic control variables
A4: Details on composition of the subsample used in the regression analyses
A5: Details on interactions between campaign tone and day of the campaign
A6: Additional references

A1 - Effect of Negative Campaigning on Electoral Participation in the 2015 General Election Campaign in England

This section reports an analysis in which the effect of campaign tone on electoral participation (voted/did not vote) is estimated. Although the question of the effect on participation is not our core interest in this article, much of the literature on the effects of negative campaigning focuses on this aspect, and we expect readers to be interested in these findings. Table A1 shows the results of a logistic regression analysis, with electoral participation as dependent variable (observed in wave 6 of the panel; 0=did not vote; 1=did vote) and the perceived tone of the campaigns of the various parties as independent variables (each observed in wave 5 of the panel; scored on a 5-point scale, 1 indicating a campaign that mainly focused on criticism of other parties and personalities and 5 indicating a campaign that mainly focused on putting forward a party's own policies). The analysis included controls for the same background variables as were used in the analyses reported in the main text of the article.

Although the sample that we used contains 19,123 cases (see data section in the main article), the number of cases in the analysis is smaller because of missing values in the dependent variable, in the independent variables, and in the control variables. The cumulative number of missing cases can be reduced by deleting the controls from the analysis. Doing so does not alter the substantive findings from this analysis: the effect of campaign tones is inconsistent. The coefficients are not significant for 3 of the 5 measures of campaign tone, but significant for the 2 others. The total effect of the five measures of campaign tone is not particularly strong. All in all, the evidence is too weak to support any hypotheses about negative effects of campaign tone on electoral participation.

Table A1: Effect of Negative Campaigning on Electoral Participation (Logit regression coefficients and standard errors)

	Including controls	Excluding controls
Campaign Tone Labour Party	.135** (.000)	.125 *** (.000)
Campaign Tone Conservative Party	.000 (.035)	.059 (.040)
Campaign Tone Liberal Democrats Party	-.006 (.042)	.004 (.919)
Campaign Tone Green Party	.059 (.037)	.061 (.043)

Campaign Tone UK Independence Party	.074* (.031)	.078 *** (.002)
Controls for demographic and socioeconomic background variables (see variables listed in appendix 2)	✓	NA
Constant	.983* (.397)	1.924 (.000)
-2LL	4493.712	6396.871
Nagelkerke pseudo R^2	.048	.009
% Correctly Classified	95.0	94.4
N	11,776	15,014

Note: Source: 2015 BES Internet Panel, wave 5 and 6.
** significant at .05 **significant at .01.*

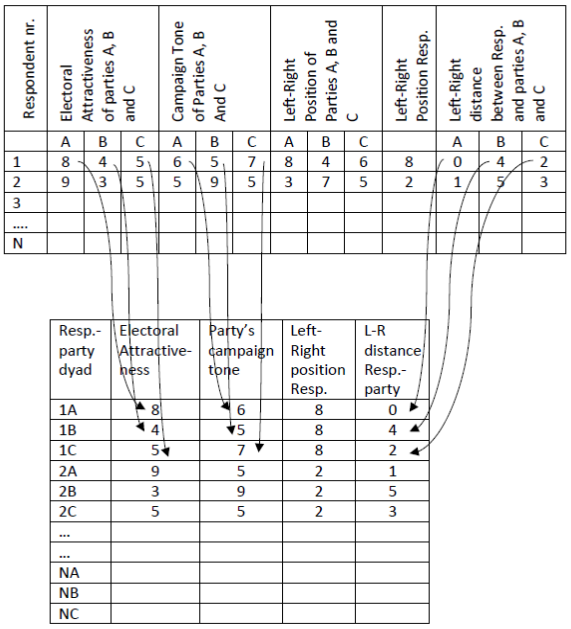
A2 Details of the stacked analysis design

Our dependent variable (electoral attractiveness of parties) and independent variable of main interest (perceived positivity/negativity of parties' campaigns) have been measured separately for each of the five parties in England. This also holds for important control variables such as evaluation of party leaders, or the positions of parties on important issues and on a left-right dimension. These variables can be analysed in different ways: separately for each party, or jointly.

Analysing these variables separately for each of the parties is particularly useful for addressing party-specific, and descriptive questions about the relationships between the dependent and independent variables, as well as between the dependent variable and a wide variety of individual characteristics. Thus, we can assess whether the electoral attractiveness of, e.g., the Conservative party is related to how respondents perceive the focus of that party's campaign (and we may add all kinds of controls for, e.g., the perceived issue positions of the Conservatives, or respondent characteristics such as their party identification). Following this strategy thus results in five different analyses, for the Conservatives, for Labour, the Liberal Democrats, UKIP and the Greens.

Yet, such party-specific analyses have clear limitations when trying to answer more general questions about the over-all importance of the effect of campaign tone on the electoral attractiveness of parties. Party-specific analyses provide us as many different answers as there are parties to questions of a more general nature. To make matters worse, these different answers are not directly comparable, because the regression coefficients of each are conditioned on the multivariate distributions of the variables in the analyses, and these are indeed quite different. To solve this problem, a form of analysis is required that considers the multiple preferences for all parties jointly.[i]

Analysing multiple (party-specific) measures of electoral attractiveness for all parties jointly can be done by shifting the unit of analysis from the respondent to the response: a respondent's answer to the question how attractive a given party is as an option to vote for. As illustrated in Figure A1 this yields a 'long' or 'stacked' data structure in which every respondent is represented by as many records as there are parties for which it was asked how attractive they are (for the sake of convenience we restricted the illustration in Figure A1 to only three parties, named A, B and C respectively).



Respondent nr.	Electoral Attractiveness of parties A, B and C			Campaign Tone of Parties A, B And C			Left-Right Position of Parties A, B and C			Left-Right Position Resp.	Left-Right distance between Resp. and parties A, B and C		
	A	B	C	A	B	C	A	B	C		A	B	C
1	8	4	5	6	5	7	8	4	6	8	0	4	2
2	9	3	5	5	9	5	3	7	5	2	1	5	3
3													
....													
N													

Resp.-party dyad	Electoral Attractive-ness	Party's campaign tone	Left-Right position Resp.	L-R distance Resp.-party
1A	8	6	8	0
1B	4	5	8	4
1C	5	7	8	2
2A	9	5	2	1
2B	3	9	2	5
2C	5	5	2	3
...				
...				
NA				
NB				
NC				

Figure A1 Illustration of restructuring of a regular ('wide') to a stacked (long) datamatrix

The top part of Figure A1 depicts a (section of a) datamatrix of which the structure follows the common principle that every respondent is reflected in a row, every question in a column, and the responses to the questions the cells. In this matrix are included three questions that were each asked for multiple parties (which are labelled A, B and C). The first of these pertains to the electoral attractiveness of parties, the second to the campaign tone of parties, and the third to the position of parties on a left-right scale. As these questions were asked for each of the three parties, the datamatrix contains 9 columns to accommodate the response to these questions. To the right of these columns is a variable that is not party-specific, namely the respondent's position on the left-right scale. The availability of this variable, in combination with the three variables reflecting the positions of the parties on the left-right scale, allows the calculation of three new variables, namely the distance of the respondent to each of the three parties, which is the absolute difference of the respective scores.

The bottom part of Figure A1 shows the restructured (stacked) datamatrix. Here the rows do not reflect respondents (as was the case in the top half of the figure) but respondent-party combinations or dyads. As there are three parties in this illustration, each respondent is represented in three rows (e.g., respondent 1 is involved in the three dyads 1A, 1B and 1C). This makes it possible to define the three party-specific responses of each respondent (for respectively parties A, B and C) as a single variable, while the identification of the dyad specifies which respondent and which party is involved in a specific response. The arrows illustrate (only for respondent 1) where the party-specific scores in the top half of the figure are located in the stacked matrix at the bottom. This procedure thus transforms party-specific variables (in the top matrix) into generic variables (in the bottom matrix) that pertain to all respondent-party dyads. The illustration in Figure A1 also shows how variables that are not party-specific are represented in a stacked datamatrix. The respondent's own position on the left-right scale is not party specific, hence in the stacked datamatrix its values

do not vary between parties (for a given respondent, thus it is the same value for the dyads 1A, 1B and 1C), but they vary only between respondents.

Having restructured the datamatrix in this way, a regression of our dependent variable (electoral attractiveness of a party) on the independent variable (the campaign tone of a party) is straightforward, and its results give rise to a single coefficient. As indicated below, such an analysis can in principle be expanded to include characteristics of individuals and characteristics of parties.

This stacked data structure is analogous to that for conditional logit analysis. The main difference is that the stacked dependent variable in conditional logit analysis (which is usually party choice) is constrained to have only the value '1' for only one of the records representing a particular respondent (namely for the party that was chosen) and the value '0' for all other records representing that respondent. That restriction does not apply in our case, as the electoral attractiveness of one party does not logically restrict how attractive other parties are (i.e., these measures are not ipsative). The electoral attractiveness measures range from 0 to 10 and are interpreted as (quasi-)interval, thus enabling the use of OLS.

The stacked structure of the data requires that many explanatory variables have also to be defined in terms of relationships between the individual and party in question; thus, in order to assess the importance of, e.g., left/right ideology in a stacked data arrangement the relevant variable is not respondents' left/right *position* (as it would in a 'wide' data arrangement which would be used for separate, party-specific analyses) but instead the left/right *distance* between the respondent and each of the parties. For some kinds of variables this is relatively easy to do, but for other variables, (e.g., demographics, or attitudes) this may require the construction of synthetic variables that reflect the 'affinity' between a respondent and a party (De Sio and Franklin 2011). Several procedures exist to do this[ii] which, when applied, provide the possibility to analyse all party-specific measures of electoral attractiveness as a single, generic variable (i.e., electoral attractiveness for a party, irrespective of the identity of that party). This in turn allows explanatory analyses of this generic variable that can incorporate the following different kinds of explanatory variables:

- *Individual-specific variables,* which are characteristics of respondents. The values of these variables vary between individuals for each party, but not between parties for each individual. Examples include demographics, attitudes, etc. Coefficients for these variables reflect the effect of voter characteristics on preferences for all parties;

- *Party-specific variables,* which are characteristics of parties. The values of these variables vary between parties for each individual, but not between individuals for each party. Examples are parties' size, government status, etc. Coefficients for these variables reflect the effect on preferences of party characteristics that are the same for all respondents;

- *Individual-party affinities*, which are characteristics of respondent-party dyads. The values of these variables vary between parties for each individual, and also between individuals for each party. Examples are distances in ideological or issue dimensions or sympathy scores for the leaders of parties, but also synthetic affinities that express how attractive each of the parties is for a respondent given their demographic characteristics, attitudes, etc. (see note

8 in the main text). Coefficients for these variables reflect the effect on preferences of party-respondent distance or affinity;

- Interactions between these kinds of variables.

Our dependent variable, multiple party-specific measurements of electoral attractiveness, can, when structured in the stacked form, thus be analysed in the following general form:

$$EA_{ij} = a + \sum_{k=1}^{k} b_k R_{ik} + \sum_{m=1}^{m} b_m P_{jm} + \sum_{q=1}^{q} b_q D_{ijq} \text{ [+ possible interactions]} + e_{ij} \qquad [1]$$

where *EA* represents the electoral attractiveness of parties, one for each combination of respondents (*i*) and parties (*j*), R_{ik} represents respondents' scores on *k* different individual characteristics (which do not vary across parties hence the absence of the subscript *j*) ; P_{jm} represents parties' scores on each of *m* different party characteristics (which do not vary across individuals, hence the absence of subscript *i*) ; and D_{ijq} represents the scores of all $i \times j$ respondent-party dyads on *q* different dyadic characteristics.[iii] This approach is a straightforward application of Przeworski and Teune's (1970) recommendation to climb the ladder of abstraction by replacing specific (non-comparable) phenomena by more general (and hence more comparable) ones, and to replace proper names by theoretically relevant characteristics.

A3 Details of control variables used in the analyses

The following variables were used as controls in the analyses reported in Table 2 in the main text of this article. (* indicates recoded from more detailed information in BES)

Background controls

- *Gender*: 1=Male, 2=Female.
- *Age*: respondents' age in years.
- *Gross Household Income*: 15 categories (1= Under £5000 a year, 15=Over £150.000 a year).
- *Ethnicity**: 0=White, 1=Non-white.
- *Home Ownership**: 0=Own house, 1=Rent House.
- *Work status**: represented by three dummies respectively Work 8 Hours or More (0=No, 1=Yes), Student (0=No, 1=Yes) and Retired (0=No, 1=Yes). The reference category comprises unemployed, working less than 8 hours per week and missing data.
- *Religion**: represented by two dummies: No Religion (0=No, 1=Yes) and Christian (0=No, 1=Yes). The reference category comprises non-Christian religions, and missing data.
- *Education*: represented by the proxy Age Ending Fulltime Education, an ordinal variable with 5 categories, from '15 and under' to '20+'.
- *Marital Status**: represented by two dummies: Partnered (0=No, 1=Yes), Ex-Partnered (0=No, 1=Yes). The reference category comprises never partnered and missing data.
- *Subjective class**: represented by two dummies: Working Class (0=No, 1=Yes) and Middle Class (0=No, 1=Yes). The reference category comprises another class, and missing data.

Controls for partisan related attitudes and orientations

- *Party Identification**: 0=does not identify with a party, 1=does identify with a party.

- *Left-right distance to party**: a set of variables, one for each party, and subsequently stacked in the data, reflecting the absolute difference between the position of the respondent on a Left-Right scale (running from 0 to 11) and the position where the respondent perceives each of the parties on stat same scale
- *Redistribution Distance to party**: as left-right distance, but then in relation to a 0 to 10 scale running from 'Some people feel that government should make much greater efforts to make people's income more equal' to 'Other people feel that government should be much less concerned about how equal people's incomes are'
- *EU distance to party**: as left-right distance but then relating to a 0-10 scale about the relationship between Britain and the EU. Random halves of the sample were asked slightly different questions. One half was asked 'Some say European unification should be pushed further. Others say it has already gone too far. What is your opinion? And where would you place the following parties on this scale?' The other random half was asked 'Some people feel that Britain should do all it can to unite fully with the European Union. Other people feel that Britain should do all it can to protect its independence from the European Union. Where would you place yourself and the political parties on this scale?'. Separate analyses showed that (in the context of the analyses reported here) distances on both versions of this scale perform virtually identically, reason to combine them (and avoid the loss of half the sample).
- *Like/Dislike Party Leaders*: How much do you like or dislike each of the following party leaders? [followed by the names of the leaders of the five parties competing in England]
- *Non-Ipsative Electoral Preference*: a set of variables indicating respondents' strength of preference for each of the parties. One random half of the sample was asked 'How much do you like or dislike each of the following parties?', the other half 'How likely is it that you would ever vote for each of the following parties?', each on a scale from 0 to 10. Separate analyses showed that (in the context of the analyses reported here) distances on both versions of this scale perform virtually identically when combined with a control dummy that indicates which version was asked to whom. We therefore combined these two versions (with the control) to avoid the loss of half the sample (see also note 8 in the main text). These questions were asked in wave 4 (and used in our analyses as a control) and in wave 6 (where they constitute the dependent variable of our analyses).

A4: Details on composition of the subsample used in the regression analyses

The results in Table 2 of the article are based on responses from 7772 individual responses, a much smaller number than the 19,123 English respondents who participated in waves 4, 5 and 6 of the panel. This reduction is caused by listwise deletion of cases with missing responses in dependent, independent and control variables (see also explanation in footnote 14 of the article). This affects the composition of the group included in the analyses, as reported in Table A2, below. Because the deletion of cases with missing values does not lead to restricted variance in any of the variables, and because all these variables are included in the extensive set of controls (see section A3 of the Online Appendix) this has a minimal (if any) impact on the findings.

Table A2: Comparison of composition of entire sample and subsample included in regression analyses

	Entire sample of English respondents included in each of waves 4, 5 and 6 (n=19123)	Subsample of cases included in regression analyses (n=7772)
Gender (% female)	51%	39%
Age (average in years)	50.4	54.2
Social class		
sees oneself as middle class	33%	42%
sees oneself as working class	42%	40%
Education (completed before age 17)	36%	33%
Religion (percentage 'none')	29%	30%
Owns own home (incl. with mortgage)	67%	76%
Interested in the election (% 'very')	55%	68%
Vote intention for 2015 election (wave 5)		
Conservative	32%	34%
Labour	30%	31%
Liberal Democrat	7%	9%
UKIP	14%	14%
Green	5%	6%
Self-placement on 0-10 Left-Right scale (average)	5.13	5.12
Perception of campaign tone		
Conservative	2.73	2.68
Labour	2.66	2.69
Liberal Democrat	2.75	2.82
UKIP	3.05	3.09
Green	3.25	3.35

Note: Source: 2015 BESIP (waves 4, 5, 6)

A5: Details on interactions between campaign tone and day of the campaign

As summarised in the article, we assessed whether the strengths of the backlash effect and the second-order boost effect vary over the course of the campaign. We did so by interacting each of the independent variables with the day of the campaign (the rolling thunder sample comprised 38 days, the numbering of the days was centred). The results of these analyses are reported in Table A3. As can be seen, the interaction with Campaign Tone is significant; it implies that the strength of the backlash effect increases over the course of the campaign. The interaction effect of the tone of the second-most preferred party (compared to that of one's most preferred party) is not significant, which implies that there is no evidence of different strength of the second-preference boost effect over the course of the campaign

Table A3: Time-dependency of strengths of Backlash Effect (Hypothesis 1) and Second Preference Boost Effect (Hypothesis 2). Effects of Campaign Tone and its interaction with day of campaign on (non-ipsative) Electoral Preferences (OLS Regression coefficients and standard errors)

	Model 2 from Table 2 (main article) Test of Hypotheses 1 and 2	**Model 2 with added interactions with day of campaign (centered)**
Campaign Tone (wave 5) (tests Hypothesis 1)	.220 (.011) ***	.212 (.012) ***
Interaction of Campaign Tone and (centred) day of campaign		.002 (.001) **
Second-most preferred party being more positive than most preferred party (wave 5) (tests Hypothesis 2)	.387 (.093) ***	.457 (.107) ***
Interaction of Second-most preferred party being more positive than most preferred party (wave 5) and (centred) day of campaign		-.001 (.009)
Controls for Partisan related Attitudes and orientation (all in wave 4)		
Party Identification	.865 (.038) ***	.861 (.042) ***
Left Right Distance to party	-.110 (.006) ***	-.115 (.007) ***
Redistribution Distance to party	-.032 (.005) ***	-.033 (.005) ***
EU Distance to party	.001 (.004)	.002 (.004)
Like/Dislike Party Leaders	.166 (.009) ***	.171 (.010) ***
Pre-existing Non-Ipsative Electoral Preference	.589 (.011) ***	.586 (.012) ***
General controls		
Controls for Demographics and Socio-Economic variables	✓	check
Control for version of the dependent variable	.018 (.023)	.002 (.025)
Control for whether party is on the ballot in R's constituency	.319 (.141)	.374 (.149)
Day of campaign (centered)		-.005 (.002)
Constant	.597 (.148) ***	.585 (.158) ***
Adjusted R square	.799	.803

*Note: Source: 2015 BESIP (waves 4, 5, 6) N (respondents)=7772. ***: significant at .001. **: significant at .01. The model is an OLS-regression on a stacked dataset, with clustered standard errors on respondent. The dependent variable in this model is (non-ipsative) Electoral Preference (wave 6).*

A6 References

De Sio, L.,Franklin, M. (2011) Generic variable analysis: climbing the ladder of generality with social science data, Paper, First European Conference on Comparative Electoral Research, Sofia, December 2011. [http://true-european-voter.net/sites/default/files/DeSio%20and%20Franklin.pdf].

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[i] Such a procedure is also required to avoid another problem inherent in analysing multiple (party-specific) measurements of electoral attractiveness separately: the impossibility to use explanatory variables that vary between parties, but that are constant for each party separately (e.g., party size).

[ii] Several approaches to the construction of such synthetic affinity variables exist. We use here the so-called 'y-hat' procedure (cf. Van der Eijk et al. 2006). An alternative procedure is based on the application of Joint Correspondence Analysis (see Franklin and Weber 2014). Yet another approach, mainly used by sociologists, compares individual characteristics with the average for all supporters of each given party, producing a "quasi-distance" measure that is comparable across parties.

[iii] As the data structure is clustered, a multi-level specification of this model is necessary if the residuals display significant intra-class correlation, for examples see Franklin and Renko (2013).