The Endogeneity of Preferences in Spatial Models:

Evidence from the 2005 British Election Study

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ABSTRACT

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Downsian spatial models of electoral choice assume that voters' ideological/policy preferences are fixed. This paper tests this assumption with an experiment conducted as part of the 2005 British Election Study. Experimental results indicate that voters' preferences are not exogenous, but rather can be influenced by information about the ideological/policy positions of political parties, such as that provided in election campaigns. Voters are attracted by party cues, rather than repelled by them. Information about the positions of party leaders *per se* is inconsequential. These findings have important implications for the specification of spatial models and the design of national election studies.

THE ENDOGENEITY OF PREFERENCES IN SPATIAL MODELS:

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Since Downs' (1957) pioneering study of spatial models of electoral choice, political scientists have wrestled with two important problems: how to take account of the non-ideological, or non-policy, aspects of voter rationality; and how to measure differences between the preferred ideological/policy positions of voters and the positions advocated by competing political parties. This paper addresses a third problem: the possible endogeneity of voters' preferred ideological/policy positions vis à vis the positions of parties and party leaders. The existence of endogenous voter preferences would be consistent with Stokes (1963, 1992) early critical analysis of Downsian models, subsequent studies of the etiology of mass and elite beliefs and opinions (e.g., Alvarez and Brehm, 2002; Carmines and Stimson, 1989; Gerber and Jackson, 1993; Martin and Quinn, 2002; Sniderman, Brody and Tetlock, 1991; Zaller, 1992), recent research on campaign effects on electoral choice (e.g., Clarke et al., 2004), and more general critiques of neo-classical microeconomic utility-maximization theories (e.g., Galbraith, 1960; Thaler, 1991; see also Becker, 1996). Endogeneous voter preferences have significant implications for the specification of spatial models of voting and the design of election surveys used to gather data to test such models.

We investigate the possible endogeneity of voter preferences to information about spatial locations of parties and party leaders using a survey experiment conducted as part of the 2005 British Election Study. The first section of the paper locates the study in terms of theoretical and empirical debates about spatial models of party support. Then, we describe the survey experiments[1] conducted to investigate if voters' ideological/policy preferences respond to the perceived positions of parties and party leaders. Next, we present empirical

results of the experiments. The conclusion summarizes major findings and briefly discusses theoretical and methodological implications for future research on electoral choice.

<div style="text-align:center">**Theoretical Considerations**</div>

Downs' (1957) model of electoral choice remains highly influential nearly half a century after it was first published. According to this model, voters maximise utility by selecting the party that is closest to them in a unidimensional "left-right" or "liberal-conservative" ideological/policy space. Voter *i'*s utility provided by party *k* is given by:

$$U_i(k) = - (x_i - s_k)^2 \qquad\qquad [1]$$

where x_i is *i*'s preferred ideological/policy position and s_k is the position of party *k*. The squared term, $(x_i - s_k)^2$, indicates that the utility provided by a party k to a voter i varies as quadratic function of the distance between the voter and the party.   Adding a stochastic component, ε_i, to [1] yields the standard random utility model (Hensher, Rose and Greene, 2005: 82-87).

Subsequent efforts to extend Downs' ideas have focused on five main research questions. First, is there one or are there multiple ideological/policy dimensions that define the space in which voters seek to maximise utility? (e.g., Enelow and Hinich, 1984; Evans, 1999; Fiorina, 1996; Grofman, 1985; Heath et al 2001; Lewis-Beck and Nadeau, 2004). Second, is a simple quadratic specification of the utility function adequate? That is, is the squared absolute distance (or in a multi-dimensional space, the sum of the squared absolute distances) between the voter and the party the best (negative) measure of utility, or should account be taken of the current policy *status quo* (and the likely policy compromises that parties will make) in determining how the voter assesses the importance of these distances? (Adams, Merrill and Grofman, 2005; Alvarez, 1997; Kedar, 2002; Merrill and Grofman, 1999; Rabinowitz and MacDonald, 1989). Third, how, if at all, should spatial models incorporate non-ideological/non-policy factors, such as candidate or party leader images,

partisanship, and valence judgements about performance (Adams, Merrill and Grofman, 2005; Alvarez and Nagler, 1995; Clarke et al., 2004; Erikson and Romero, 1990; Merrill and Grofman, 1999; Schofield, 2004)? Fourth, are the positions of political parties best measured as the positions of the *average* voter or as the positions assigned by individual voters? Alternatively, should party locations be based on "objective" data from party manifestos or measures of the central tendency of expert opinions (Adams, Merrill and Grofman, 2005; Budge et al., 2001; Benoit and Laver, 2007; Merrill and Grofman, 1999; Rabinowitz and MacDonald, 1989)? Fifth, to what extent are measures of party positions contaminated either by "assimilation," i.e., voters see parties they like as closer than is actually the case, or by "contrast," i.e., disliked parties are seen as further away than they actually are (Granberg and Brent, 1980; Merrill, Grofman and Adams, 2001)?

In a recent study, Adams, Merrill and Grofman (2005) offer a "unified discounting" model of electoral choice in which they address several of these questions. The general form of their model is:

$$U_i(k) = \Sigma a_j \, [(x_{ij} - (SQ + (1 - d_k)(s_{kj} - SQ)))]^2 + \mathbf{b}_k \mathbf{t}_{ik} + X_{ik} \qquad [2]$$

where a_j represents the policy salience for the *j*th issue in the ideology/policy space; x_{ij} is the position of voter *i* on the *j*th issue; $(SQ + (1 - d_k)(s_{kj} - SQ))$ is the discounted position of the *k*th party on issue *j*, which takes account both of the policy *status quo* (SQ) and the rate (d_k) at which the voter believes parties will be able to move policy away from SQ, $\mathbf{b}_k \mathbf{t}_{ik}$ represents the measured effects of non-policy components of utility (e.g., party leader evaluations or partisanship), and X_{ik} represents all unmeasured non-policy components of utility.

The key feature of [2] for present purposes is the term for the voter's position, x_{ij}. For all its elegance and ingenuity, [2] simply *assumes*— as Downs assumed in [1] a half century

ago—that x_{ij} is fixed, i.e., that voters' preferences can be taken as given. But, there are reasons for suspecting that ideological and policy preferences cannot safely be treated as a *maintained* assumption. For example, as Galbraith (1960) observed some four decades ago, in many aspects of modern economic life preferences clearly are not fixed. Rather, they are constantly being shaped by new products that entrepreneurs develop and market, and by the intensive publicity campaigns that accompany them. It seems odd that the very obvious role performed by advertising in the sphere of economic consumption—that of changing preferences—is assumed away when analogous models of political consumption are specified. Part of what party politics is about, and certainly part of what election campaigning is about, is efforts by parties and their leaders to shape public opinion. Campaigning is not just about persuading voters that "our" party can best satisfy *pre-existing* ideological and policy preferences. Rather, parties endeavour to shape issue agendas to their advantage, while simultaneously trying to persuade voters of the wisdom of adopting particular positions on various issues. In both cases, the aim is to convince voters that they *want* what "we" can provide (e.g., Budge et al., 1983; Clarke et al., 2004; Stokes, 1963, 1992). In the language of microeconomic analysis, politicians regularly act as if they believe that voters' ideological and policy "tastes" are endogenous (Becker, 1996).

Here, we test this endogenous preferences conjecture, i.e., the hypothesis that voters' ideological/policy preferences change systematically in response to informational cues voters are given. Experimental evidence presented below indicates that, in fact, ideological/policy preferences respond to cues describing the positions of political parties. We also examine hypotheses regarding possible mechanisms involved in this preference-shaping process. Consistent with "attraction/party mismatch" and "attraction/self mismatch" hypotheses, we

find that information that contradicts initial self- or party-placements prompts voters to shift their preferences in the direction of the cues provided—and the more discordant the information, the bigger the preference shift.

Research Design and Data

The data were gathered in the initial (pre-election campaign) wave of the 2005 British Election Study (BES) rolling campaign panel survey. This national survey (N = 7793) was conducted by internet in parallel with the traditional BES in-person pre- and post-election survey.[2] Extensive direct comparisons of the in-person and internet data indicate strong similarities in distributions and covariance structures (Sanders et al., 2007). Voting models estimated using the in-person and internet data yield virtually identical inferences regarding the determinants of party choice. These similarities testify that the internet survey provided data comparable in quality to those generated by the traditional BES in-person surveys.

The technical capacity provided by the internet mode was used to conduct a "feedback-to-respondent" experiment. Early in the survey respondents were asked to place themselves and the three major parties (Labour, Conservatives, Liberal Democrats) on two 0-10 ideological/policy scales. A "tax/spend" scale measures positions on the traditional economic left-right dimension in British politics, and a "punish criminals/protect rights of the accused" scale measures positions on a liberal-authoritarian dimension.[3] Responses were coded so that a minimum score on the tax/spend scale denoted a strong preference for higher taxes and more spending on public services, whereas a maximum score denoted a strong preference for lower taxes and less spending on public services. A minimum score on the punish/protect scale indicated a strong preference for protecting the rights of the accused, and a maximum score indicated a strong preference for punishing criminals. Later in the survey,

we presented respondents with a two-dimensional graph on their computer screens, with its axes defined by the tax/spend and punish/protect scales. The graph (illustrated in Figure 1) showed respondents where they were located in that two-dimensional space according to the answers they had provided earlier regarding their positions on the two scales. Respondents were invited to use their computer's "mouse" to reposition themselves in the space if they thought that the initial measures had positioned them incorrectly.

(Figure 1 about here)

At this second, "invitation to reposition" stage, we varied the stimulus provided to respondents. The sample was randomly divided into nine groups: eight treatment groups and a control group. We used several treatment groups to ensure that an observed experimental effect was not an artefact of a particular experimental stimulus. Respondents in the control group simply were shown where they were located in the two-dimensional space. Respondents in the treatment groups were given additional (hypothetical) information, indicating where "the average respondent" or "supporters" or leaders of different parties were located. Various treatment conditions are summarized in Table 1. In devising the treatments, the principal objective was to establish the extent to which different sorts of informational stimuli might induce respondents to adjust their positions (change their ideological/policy preferences) in the two-dimensional space. Variations in treatment conditions allow us to explore the relative importance of information about parties, leaders and party supporters as possible influences on the extent to which respondents reposition themselves. We were aware that simply offering respondents an opportunity to adjust their positions might constitute an implicit inducement to do so. Thus, when analyzing the results of the experiments, the

fundamental comparison was between repositioning that occurred among the control group and repositioning observed in various treatment groups.

Results

Figure 2 reports the percentages of respondents, by experimental group, who indicated that they were "not in the right place" and wished to reposition themselves. The results are revealing. In the control group, just over 7% indicated that they were incorrectly placed. In every treatment group the number was noticeably higher, with over 21% of those in treatment group three wanting to reposition themselves.[4] The consistency of these results suggests that information provided in various experimental treatment groups influenced respondents' propensities to reposition themselves.[5]

(Figure 2 about here)

Figure 3 reports the mean *absolute* changes recorded by treatment group on the scales defining the two-dimensional space. Panel A shows mean changes on the 0-10 tax-services scale, and Panel B reports mean changes on the crime-rights scale. Note that the mean change for the control group is the lowest for both scales. This reinforces the idea that the information presented to the treatment groups affected their propensities to reposition. Also, the largest mean changes on both scales occurred with treatment groups three (party supporters, 2005 scenario) and seven (political parties, 2005 scenario)—thereby suggesting that party images provided more powerful cues to respondents than did leader images. In addition, mean changes on the crime-rights scale generally tended to be greater than those on the tax-services scale, suggesting that respondents were generally more inclined to shift their positions in terms of the liberal-authoritarian dimension than they were in terms of the traditional economic left-right dimension.

(Figure 3 about here)

Table 2 summarizes difference of means tests for absolute changes on the two scales, together with a third set of absolute changes, namely the mean Euclidean distances moved by respondents in various groups. F-tests, probability values, and etas involve comparisons of treatment groups with the control group. The results indicate that the mean changes in almost every treatment group are significantly different from (and, as seen in Figure 3, greater than) the changes in the control group. The only exception occurs for the pure "leaders" treatment group (Group Four). This treatment designated party leaders by name, but did not specify their party affiliations. In all three panels of Table 2, mean changes recorded for this group are not significantly different from those of the control group (p = .226 in Panel A; p = .314 in Panel B; and p = .211 in Panel C). This suggests that it is a *party label* cue—whether in the form of "the party" in general or "the party supporter"—that encourages repositioning, rather than the cue provided by a party leader. Information about party positions matter for where voters position themselves in ideological/policy space.

(Table 2 about here)

Table 3 reports the results of extending these analyses by applying a variety of statistical controls (see, e.g., Imai, 2005). Panel A models absolute changes on the tax-services scale, providing estimates of the effects of being in various treatment groups, in comparison with being in the control group (the reference category). Panels B and C report equivalent models for the crime-rights scale and for absolute changes in Euclidean distances, respectively. The analyses include controls for standard demographic variables (age, education, gender, social class), as well as for three important attitudinal variables (party

identification, attention to politics, trust in party leaders) that could plausibly be expected to affect inclinations to shift ideological/policy positions.

(Table 3 about here)

The results are consistent with the bivariate analyses presented above. In all three cases, leader cues without party labels are not significant, thereby suggesting that information about the leaders *per se* does not stimulate voters to alter their ideological/policy positions. However, most of the remaining effects are statistically significant ($p \leq .05$), with the strongest one involving information about positions of "party supporters." These findings demonstrate that respondents are willing to shift their ideological/policy positions—positions that they stated only a few minutes previously—when provided with limited information describing the positions of parties and/or party supporters. Since these modest cues can elicit self-assigned positional changes, it is plausible that intensive and sustained political persuasion efforts, such as those attempted by parties during election campaigns, have significant potential to alter voters' positions in ideological/policy spaces.

Explaining Movement: Evidence presented above indicates that party-related informational cues influence voters' propensities to reposition themselves in ideological/policy space. We next test three hypotheses that might explain the observed effects. Each hypothesis is based on the idea that *discordant information* provokes responses. The first hypothesis specifies that the extent of discordant information about party positions prompts respondents to move in the direction of party cues. To the extent that there is a mismatch between a respondent's characterisation of party positions and the position parties are assigned in an experimental treatment, a respondent will move towards the "new" assigned party positions. This hypothesis implies that party cues attract voters which, in turn, implies directional movement

toward either end of the 0-10 ideology/policy scales, depending on where the respondent and the treatment cue are located. The prediction associated with this "attraction/party mismatch" hypothesis is that, *ceteris paribus*, the extent of a respondent's directional movement should be positively affected by the extent of the mismatch between the respondent's pre-experimental positioning of party X and party X's treatment cue position.

The second hypothesis is similar, but it proposes that discordance associated with a mismatch between the *respondent's own pre-experimental position* and a party position implied by a treatment cue can be reduced by the respondent moving towards the treatment cue. The prediction of this "attraction/self mismatch" hypothesis is that the extent of respondents' directional movement should be *positively* affected by the mismatch between their *own pre-experimental positions* and party X's treatment cue position.

The third hypothesis provides a counterweight to the first two. It suggests that, rather than being attracted to party image cues, respondents are *repelled* by them. This would imply that the less the distance between the respondent's self-placement or party-placement and the treatment cue, the more likely the respondent is to move further away from the cue. This "repulsion" hypothesis thus predicts that directional movement should be *negatively* affected by the extent of mismatch between either pre-experimental self- or party-placement and the treatment cue.

Table 4 reports regression analyses of the effects of experimental party-related cues on directional changes in the tax-services scale. These regressions are restricted to "movers" to ensure that the extent of directional change along each scale is analyzed only for respondents who actually repositioned themselves on that scale. Statistical controls for demographics, party identification, attention to politics, and trust in party leaders are applied . The results

strongly support the two "mismatch" hypotheses rather than the "repulsion" hypothesis. Consider, first, Model A which specifies three independent variables. The "Labour-related cue" variable measures the distance between where respondent placed the Labour Party on the tax-spend scale before the experimental treatment and where Labour was placed after the experimental treatment. The coefficient (b = .086) is positive and statistically significant (p < .001). This indicates that the greater the distance between (a) and (b), i.e., the greater the discordance between a respondent's initial perceptions of the position of the Labour Party and the experimental placement of that party, the greater is the movement towards Labour's treatment position. Note, moreover, that this "attraction" effect also applies for Conservative-related and Liberal Democrat-related cues, which also have positive, significant coefficients (p < .01 and p < .001, respectively). In sum, Model A's coefficients are consonant with the "attraction/party mismatch" hypothesis.

(Table 4 about here)

A similar conclusion is suggested by Model B. All three party-related cues yield positive coefficients, although the Conservative cue term is just below significance at the .05 level (t = 1.56). Again, the key to interpreting these coefficients is that they represent party cue attraction effects. The positive effects indicate that, if an experimental cue provided a higher score on the tax-services scale than respondents originally gave themselves, then they tend to increase their scores on the scale. These results, therefore, clearly support the "attraction/self mismatch" hypothesis.

Model C specifies both sets of attraction effects. The independent variables represent the sum of distances (1) between an experimental party cue and a respondent's placement of the party, and (2) between a cue and a respondent's initial self-placement. In this model, the

effects are even more consistent than those for models A and B, with all three test coefficients positive and significant at p < .001 and an adjusted R^2 = .294. Again, there is clear evidence that the greater the mismatch between an individual's initial assessments and the treatment cues to which they are exposed, the more that the individual moves towards the party cues. In conditions of discordance, party cues attract.[6]

Table 5 replicates the analyses described above for the crime-rights scale. All coefficients are positive and statistically significant (p < .001). Once more, positive signs on the coefficients indicate that the greater the mismatch between a respondent's pre-experimental placements and the treatment cues provided, the greater is the movement towards the treatment cues. As in Model C of Table 4, this effect operates for Labour, Conservative and Liberal Democrat *party* cues. The biggest movement is associated with the Liberal Democrat cue (b = .175, p < .001), but there is also clearly an attraction effect for both Conservative (b = .130, p < .001) and Labour (b = .080, p < .001) cues. The results thus provide consistent evidence supporting the party attraction hypothesis.

(Table 5 about here)

Summary and Discussion

In the Downsian tradition, spatial models of electoral choice assume that voters' ideological and policy preferences are fixed. However, experimental evidence presented above shows that sizable numbers of survey respondents change their self-placements on ideological/policy scales in response to information about positions taken by political actors. The analyses demonstrate that the type of positional cues to which people are exposed affects the extent to which they adjust their self-placements. Giving people information about the relative positions of party leaders without party labels has little effect. However, information

about parties, party supporters or leaders with party labels is influential—there is consistent evidence of significant differences in adjustment rates between the control group and various party-cue treatment groups. Analyses of the extent of *directional movement* support the additional conjecture that voters are *attracted* to party cues, rather than *repelled* by them.

These findings have implications for one of the core assumptions of Downsian-style spatial models. *Pace* these models, voters' preferred policy positions are not fixed, even in the very short-term. In this regard, it bears emphasis that the informational cues provided to respondents in the present survey experiment were "one-shot" depictions of the hypothetical locations of parties, party leaders or party supporters in an abstract two-dimensional space. No explicit or implicit message was conveyed about the desirability of any particular policy position, and no additional auditory or visual stimuli were presented. Yet, even with these modest stimuli, sizable minorities in various treatment groups chose to adjust their positions. This suggests that there is considerable potential for ideological/policy preferences to be influenced by the abundant flow of political information available in high-stimulus situations such as election campaigns.

Given that voters' preferences can *change*, it will be useful to incorporate a temporal element into utility functions such as that in equation [2] above. A natural way to do this is to redefine the x_{ij} variable that refers to voter i's preferred position on policy j. The endogeneity in voter preferences can be recognized by reconceptualizing x_{ij} as x_{ijt}, where the t subscript denotes x_{ij} at time t. Estimating parameters in a utility function for voters with endogenous ideal points will be facilitated by using panel data. For example, a panel design in which a wave of interviewing is conducted *immediately before* election day provides the best opportunity to measure voters' ideological/policy positions after they have reacted to

information provided by parties' election campaigns. Calibrating the size of these campaign effects requires an initial immediate pre-campaign wave (e.g., Finkel, 1995)[7]. And, an immediate post-election wave is needed to measure voting behavior.
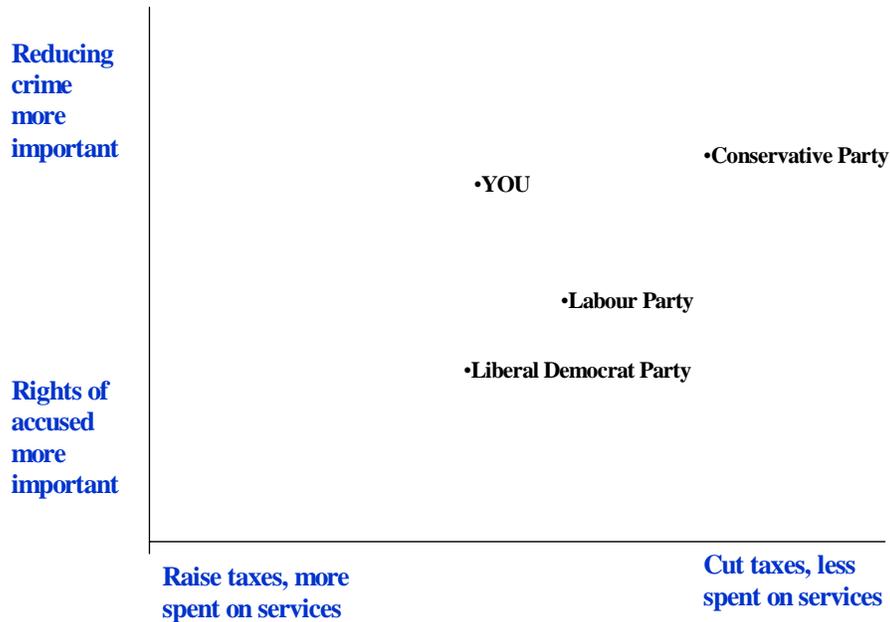
A related point is that survey designs where interviewing is spread out over an election campaign are not ideal for estimating parameters in spatial models. When implemented as tightly controlled rolling cross-sections these surveys have attractive features (see, e.g., Johnston and Brady, 2002), but preference endogeneity will introduce time-varying measurement error into assessments of ideological/policy preferences since respondents are exposed to varying amounts of campaign stimuli. Pure post-election cross-sectional designs are also problematic because they open the door to *post-hoc* rationalization effects whereby voters adjust their preferences to the ideological and policy "spin" put on election outcomes by party spokespersons, media pundits and the voters themselves. If field time is extensive, such as is almost invariably the case with in-person surveys, a variety of other undesirable post-election information effects may also occur.[8]

Finally, we emphasize that there is considerable potential for developing the type of survey experiment discussed above. In the experiment described in the present paper, respondents were given the opportunity to adjust their own ideology/policy positions. It is also possible to ask them if they wish to adjust their estimates of the *parties*' positions in light of novel information. In addition, the types of treatment effects that can be administered with internet surveys can be varied in many ways. Rather than simply graphically displaying information about spatial locations of parties or other important political actors, it is possible to provide rich textual, audio and visual information to vary the cues to which respondents are exposed. There is, then, a wide range of possibilities for using evolving internet technologies

to conduct controlled and highly cost-effective survey experiments with large representative national samples. The results of such studies may yield a rich store of information about validity of core assumptions of competing models of electoral choice.

Figure 1. Analogue of Computer Screen Presented in Feedback-to-Respondent Experiments

Earlier in the survey we asked you for your views about taxes and public spending. We also asked you for your views about the importance of reducing crime versus the importance of protecting the rights of the accused. The graph below indicates the point that we think best summarises your position. The graph also shows the positions of the Labour Party, the Conservative Party and the Liberal Democrat party:

Reducing crime more important

•YOU   •Conservative Party

•Labour Party

•Liberal Democrat Party

Rights of accused more important

Raise taxes, more spent on services   **Cut taxes, less spent on services**

Did we locate you in the right place?
• Yes: please click to submit
• No: Please point and click your mouse to indicate the point on the graph that you think best summarises your position
• Don't know

Figure 2. Percentages of Respondents Indicating That They Are 'Not in the Right Place' in Two-Dimensional Policy Space in Response to Various 'Feedback-to-Respondent' Survey Experiments
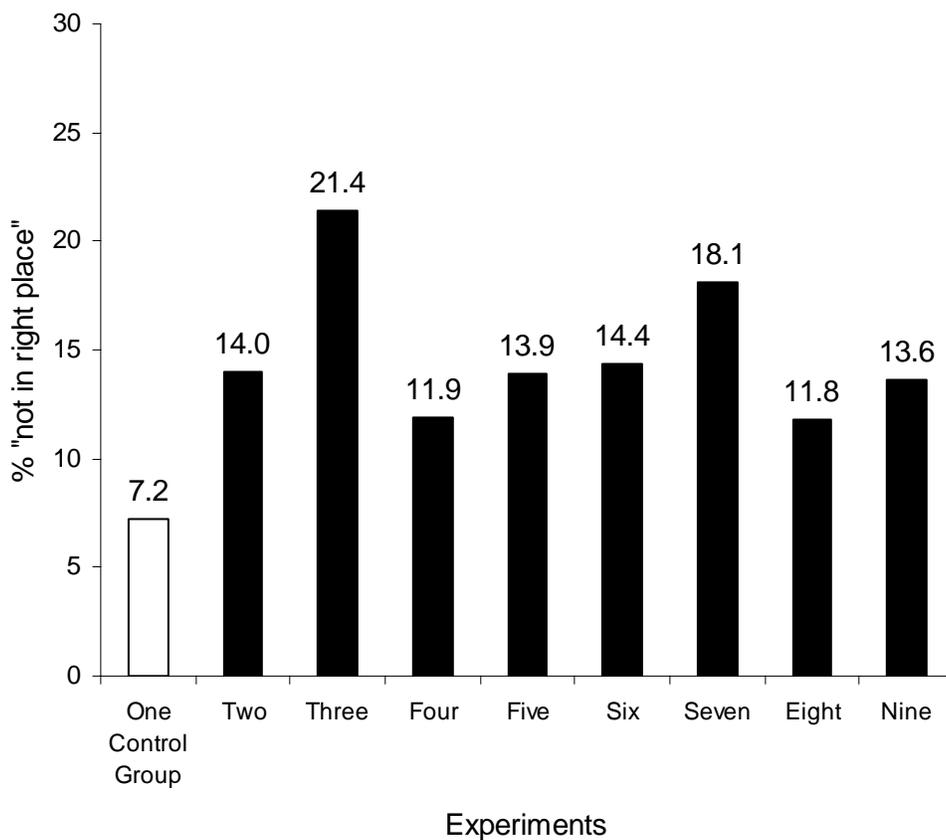
Source: 2005 BES Rolling Campaign Panel Survey

Figure 3. Mean Absolute Changes on Tax-Services and Crime-Rights Scales by Various Experimental Groups

A. Mean Absolute Changes on Tax-Services Scale
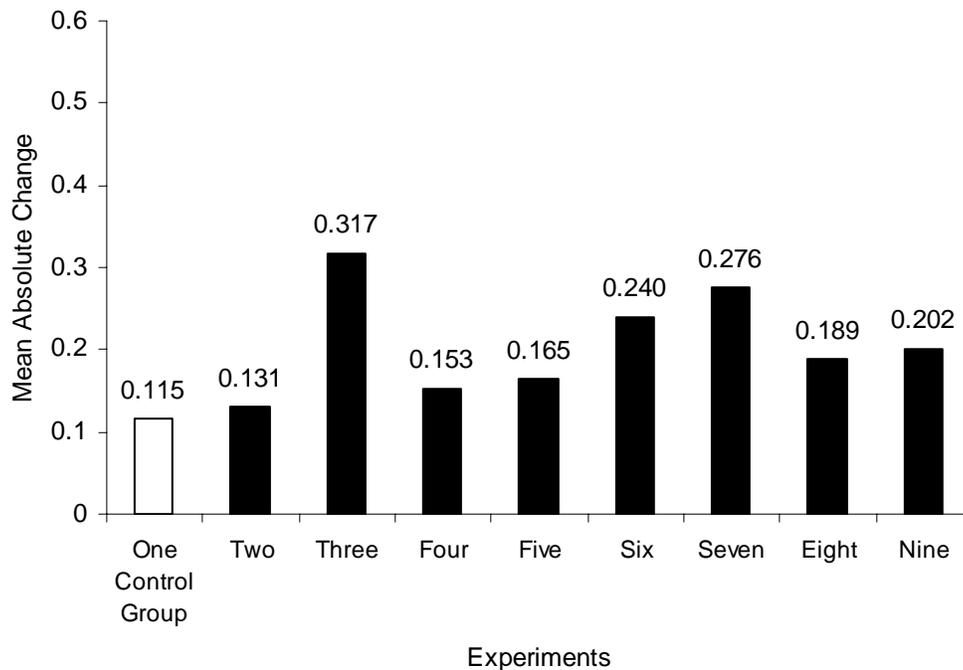
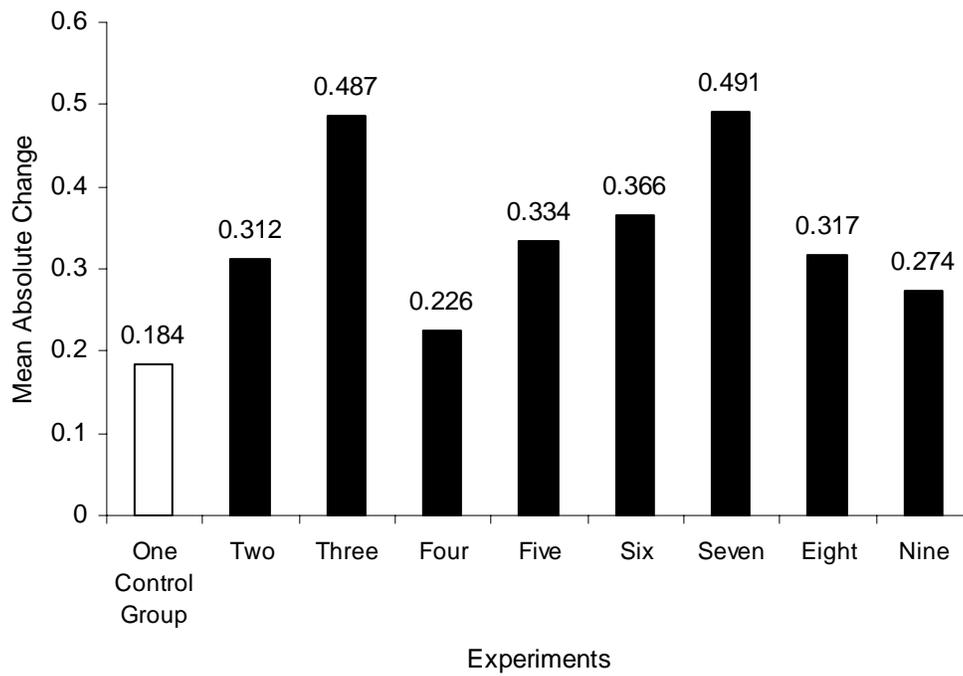## B. Mean Absolute Changes on Crime-Rights Scale

Table 1: Summary of Split Sample Experimental Treatments

Treatment 1:   CONTROL = Respondent's position only

Treatment 2:   Respondent plus 'the average voter' [5,5]

Treatment 3:   Respondent plus 'party supporters' – 'Labour supporters' [4,5]; 'Conservative supporters' [7,8]; and 'Liberal Democrat supporters' [3,3]

Treatment 4:   Respondent plus 'party leaders' – Tony Blair [4,5]; Michael Howard [7,8]; and Charles Kennedy [3,3]

Treatment 5:   Respondent plus 'leaders with party labels' – Tony Blair and the Labour Party [4,5]; Michael Howard and the Conservative Party [7,8]; Charles Kennedy and the Liberal Democrat Party [3,3]

Treatment 6:   Respondent plus 'parties 1983 scenario' – Labour positioned towards the bottom-left corner of the space [2,2]; Conservatives towards the top-right [8,8]; Liberal Democrats in the centre [5,5]

Treatment 7:   Respondent plus 'parties 1964 scenario' – all three parties positioned very close to the centre of the space with Labour slightly towards bottom left [3,3] and Conservatives slightly towards top-right [6,6]; Liberal Democrats on [5,5]

Treatment 8:   Respondent plus 'parties 2005' – Labour [5,5] and Liberal Democrats fairly close to centre, with Liberal Democrats slightly nearer to bottom left [3.5,3.5]; Conservatives towards top-right [8,8]

Treatment 9:   Respondent plus 'party supporters and leaders' – 'Tony Blair and Labour supporters' [4,5]; 'Michael Howard and Conservative supporters' [7,8]; 'Charles Kennedy and Liberal Democrat supporters' [3,3]. Positions of all three groups are the same as Treatment 5.

Figures in [square parentheses] denote the coordinates in the two dimensional space that was presented to the respondent; Tax-Spend scale scores first, Crime-Rights scores second.

Table 2. F-Tests of Statistical Significance of Mean Absolute Changes on Tax-Services and Crime-Rights Scales, Experimental Treatments Compared to Control Group

A. Absolute Changes on Tax-Services Scale

Experiment	Mean Change	F	p	eta	N
1. Respondent Only (Control)	.115				
2. Average Voter	.131	0.264	.607	.013	1614
3. Party Supporters	.317	26.677	.000	.128	1597
4. Leaders	.153	1.467	.226	.031	1550
5. Leaders with Party Labels	.165	2.672	.102	.041	1609
6. Parties - 1983 Scenario	.240	11.843	.001	.086	1590
7. Parties - 1964 Scenario	.276	20.285	.000	.113	1572
8. Parties - 2005 Scenario	.189	4.410	.036	.057	1569
9. Leaders + Party Supporters	.202	6.147	.013	.062	1620

B. Absolute Changes on Crime-Rights Scale

Experiment	Mean Change	F	p	eta	N
1. Respondent Only (Control)	.184				
2. Average Voter	.312	7.558	.006	.068	1614
3. Party Supporters	.487	33.589	.000	.144	1599
4. Leaders	.226	1.015	.314	.026	1550
5. Leaders with Party Labels	.334	9.145	.002	.078	1609
6. Parties - 1983 Scenario	.366	13.181	.000	.091	1590
7. Parties - 1964 Scenario	.491	31.910	.000	.141	1572
8. Parties - 2005 Scenario	.317	7.614	.006	.070	1569
9. Leaders + Party Supporters	.274	4.492	.034	.053	1620

C. Absolute Changes - Euclidean Distances

Experiment	Mean Change	F	p	eta	N
1. Respondent Only (Control)	.254				
2. Average Voter	.382	5.390	.020	.058	1614
3. Party Supporters	.666	41.219	.000	.159	1599
4. Leaders	.319	1.566	.211	.031	1550
5. Leaders with Party Labels	.425	9.222	.002	.076	1609
6. Parties - 1983 Scenario	.496	15.736	.000	.100	1590
7. Parties - 1964 Scenario	.618	31.920	.000	.141	1572
8. Parties - 2005 Scenario	.406	6.578	.010	.065	1569
9. Leaders + Party Supporters	.393	6.486	.011	.063	1620

Table 3. Regression Analyses (With Controls) of Effects of Experimental Treatments on Absolute Changes on Tax-Services and Crime-Rights Scales

A. Absolute Changes on Tax-Services Scale

	B	s.e.	t
Experiment			
2. Average Voter	.018	.037	0.498
3. Party Supporters	.201	.037	5.403***
4. Leaders	.038	.038	1.004
5. Leaders with Party Labels	.051	.037	1.367
6. Parties - 1983 Scenario	.125	.037	3.356***
7. Parties - 1964 Scenario	.159	.038	4.239***
8. Parties - 2005 Scenario	.080	.038	2.121*
9. Leaders + Party Supporters	.090	.037	2.368**

B. Absolute Changes on Crime-Rights Scale

	B	s.e.	t
Experiment			
2. Average Voter	.135	.052	2.611**
3. Party Supporters	.303	.052	5.836***
4. Leaders	.052	.052	0.981
5. Leaders with Party Labels	.159	.052	3.073***
6. Parties - 1983 Scenario	.191	.052	3.672***
7. Parties - 1964 Scenario	.307	.052	5.865***
8. Parties - 2005 Scenario	.147	.052	2.804**
9. Leaders + Party Supporters	.099	.052	1.927*

C. Absolute Changes - Euclidean Distances

	B	s.e.	t
Experiment			
2. Average Voter	.136	.063	2.162*
3. Party Supporters	.411	.063	6.524***
4. Leaders	.073	.063	1.141
5. Leaders with Party Labels	.178	.063	2.839**
6. Parties - 1983 Scenario	.251	.063	3.969***
7. Parties - 1964 Scenario	.362	.063	5.699***
8. Parties - 2005 Scenario	.168	.064	2.639**
9. Leaders + Party Supporters	.149	.063	2.381**

*** p ≤ .001, ** - p ≤ .01, * - p ≤ .05, one-tailed test.

Note: reference category for experimental dummy variables in regression analysis is respondent only group. Control variables include attention to politics, party identification, trust in party leaders, age, education, gender and social class. N = 7195.

Table 4. Regression Analyses of the Effects of Experimental Cues on Directional Changes on Tax-Services Scale (Movers Only)

Model A

Predictor Variables	<u>B</u>	<u>s.e.</u>	<u>t</u>
Cues Relative to R's Pre-Experimental Positioning of Parties			
Labour Related Cue	.086	.029	2.964***
Conservative Related Cue	.070	.029	2.431**
Liberal Democrat Related Cue	.122	.030	4.126***

Adjusted R^2 = .077, N = 726

Model B

Predictor Variables	<u>B</u>	<u>s.e.</u>	<u>t</u>
Cues Relative to R's Personal Pre-Experimental Position			
Labour Related Cue	.146	.045	3.213***
Conservative Related Cue	.105	.068	1.560
Liberal Democrat Related Cue	.151	.048	3.118***

Adjusted R^2 = .271, N = 726

Model C

Predictor Variables	<u>B</u>	<u>s.e.</u>	<u>t</u>
Cues Relative to Sum of R's Personal Pre-Experimental Position and Positioning of Parties			
Labour Related Cue	.133	.017	7.604***
Conservative Related Cue	.102	.019	5.374***
Liberal Democrat Related Cue	.115	.017	6.805***

Adjusted R^2 = .294, N = 726

*** $p \leq$ .001, ** - $p \leq$ .01, * - $p \leq$ .05, one-tailed test.

Note: "average voter" cue experimental group not included in analyses.
Control variables include attention to politics, direction of party identification, strength of party identification, trust in party leaders, age, education, gender and social class.

**Table 5. Regression Analysis of the Effects of Experimental Cues on
Directional Changes on Reduce Crime-Rights of Accused Scale
(Movers Only)**

Predictor Variables	<u>B</u>	<u>s.e.</u>	<u>t</u>
Cues Relative to Sum of R's Personal Pre-Experimental Position and Positioning of Parties			
Labour Related Cue	.080	.018	4.400***
Conservative Related Cue	.130	.019	6.679***
Liberal Democrat Related Cue	.175	.019	9.469***

Adjusted R^2 = .294, N = 839

*** p $\leq$ .001, ** - p $\leq$ .01, * - p $\leq$ .05, one-tailed test.

Note: 'average voter' cue experimental group not included in analyses. Control variables include attention to politics, direction of party identification, strength of party identification, trust in party leaders, age, education, gender and social class.

Endnotes

1. Survey experiments are often designated as quasi-experiments because researchers do not have control over all of the circumstances surrounding the experimental tests. However, the procedures employed here do conform to the classical model of an experiment in key respects: (a) survey respondents were randomly assigned to test and control groups; (b) respondents' preferences were measured before any experimental manipulation was carried out, respondents were then subjected to a tightly controlled experimental stimulus, and preferences were then measured again; (c) within each test group, respondents were given the same stimulus. Re: conditions for valid inference from survey experiments, see, e.g., the recent debate between Gerber and Green (2005) and Imai (2005) and the sources cited in these articles.

2. The 2005 BES data, including those generated by the experiments described in this paper, are available for downloading from the BES website: www.essex.ac.uk/bes.

3. Previous research on the measurement of ideology in Britain has consistently found these dimensions to be the two most important ones, although some studies have detected a third, weaker, "European" dimension. See, e.g., Evans (1999); Health Jowell and Curtice (2001).

4. A logistic regression distinguishing between respondents who repositioned themselves (movers) and those who did not (stayers) suggests movers were indistinguishable from stayers in terms of ethnicity, gender, region and social class. Movers were somewhat more likely to be well-educated, younger, party identifiers, and more attentive to politics ($p \leq .05$). However, the analysis has very weak discriminatory power (e.g., McFadden $R^2 = .02$), thereby suggesting that preference endogeneity is not confined to particular subgroups in the electorate.

5. In other words, the changes observed were not simply a result of providing respondents with a novel graphic representation of their earlier responses. If that had been the case, then one would have expected to find no statistically significant differences between the treatment groups and the control group.

6. Note that any analysis of directional movement is potentially subject to "bounding" effects. For example, respondents who have already placed themselves toward the upper (or lower) end of a particular scale has less opportunity to move higher (or lower) on that scale in response to a stimulus. We conducted statistical tests to assess if controlling for proximity to the upper or lower bounds of each scale in the pre-test had any effect on the observed coefficients in Tables 4 and 5. We found no evidence of bounding effects. Details are available upon request.

7. The focus in this paper is on models of electoral choice. However, another important aspect of the Downsian spatial modeling tradition concerns theoretical analyses of the behavior of vote-optimizing parties. In this regard, preference endogeneity implies that parties' vote maximizing efforts will influence the distribution of voters in policy spaces. For example, for the classic Downsian unidimensional policy space with an existing single-

peaked preference distribution, present findings on attraction effects suggest that parties locating themselves at the position of the median voter will provide voters with information that shrinks the size of this space, thereby promoting an enhanced degree of policy consensus in the electorate.

8. We are not advocating that any particular survey design is optimal for all election studies. Designs that are attractive for certain research purposes may be less well-suited for others.

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