

Another geography of turnout? Respondents and non-respondents to the 2005 British Election Study

Ron Johnston and Richard Harris

School of Geographical Sciences, University of Bristol, Bristol BS8 1SS

Paper presented to the 2005 EPOP Conference, Wivenhoe Park, University of Essex

An issue of growing concern in studies of voting patterns using survey data is the falling response rate achieved by face-to-face surveys.¹ The 2005 British Election Study (BES) pre-campaign survey achieved interviews with 60.5 per cent of the 5935 eligible individuals from the 6450 addresses sampled – a drop of nearly 15 percentage points over the average for the surveys undertaken in the 1960s and some 10 points over those in the 1970s (Scarborough, 2000, 404). Of the addresses selected, no contact could be made at 5.8 per cent, the individuals selected at a further 26.0 per cent refused to be interviewed, 4.4 per cent were otherwise unproductive and 8.0 per cent of the addresses were ‘out of scope (deadwood)’.² To what extent does this failure to reach a very substantial minority of the addresses selected have any impact upon the results of the sample survey and the conclusions drawn therefrom?

With some surveys, it is possible to compare the respondents and non-respondents directly on known criteria/variables, and thereby infer whether the respondents are an unrepresentative sample of the population from which they were drawn. With others, it is possible to compare the characteristics of the respondents with those of the population, and draw similar conclusions. The former is not possible with surveys such as the BES, however, since nothing is known about the sampled individuals other than their addresses. (As described below, the BES survey is based on a sample of addresses.) As to the latter, although the decennial census provides a great deal of information about the population, against which the respondents’ characteristics can be compared, such data are almost invariably dated (the last UK census was conducted some four years before the 2005 general election), not least because of births, deaths and migrations during the intervening period. Although in the BES the respondent sample is weighted to match the population on certain criteria (age and sex), this only marginally provides possible insights into the characteristics of non-

¹ See, for example, <http://knowledge-base.supersurvey.com/survey-response-rate.htm> and http://nces.ed.gov/statprog/2002/std2_2.asp

² ‘*Other unproductive*’ includes individuals who were either ill or away and an interview could not be arranged within the survey period, plus those with major language difficulties and others with physical and/or mental impairment which precluded a full interview. ‘Out of scope (deadwood)’ includes addresses which are not private residences, those where a home has not yet been built, is derelict or has been demolished, holiday homes on short lets, communal residences and those occupied by individuals who are not eligible for an electoral study (e.g. no adults aged 18 or over). Those categorised as deadwood are not included in the calculation of response rates, since there are no individuals available for interview at those addresses.

respondents – and says nothing about many of the variables of especial interest to studies of political attitudes and voting.

Although the BES, like many surveys, has the basic goal of selecting a sample which is representative of the national population – in this case, the national registered electorate – spatial (geographical) strategies are often deployed to enhance the survey's cost efficiency. In particular, rather than take a random sample of individuals, which would be expensive to contact in a programme of face-to-face interviews by a team of trained fieldworkers, many such surveys – including the BES – use a spatially-stratified clustered sampling design. This has to be structured so that, as far as possible, the choice of strata ensures that the overall sample is representative of the larger population.

A further geographical issue is important in election studies such as the BES. National elections in countries like the UK are also local events because they comprise a large number of separate constituency contests (646 at the 2005 general election). Although most of those contests largely mirror the national – i.e. the main parties dominate the campaigns for votes – they also have their own particular features. Important among these is the nature of the local contest among two or more of the main parties. Some of the contests are much more open than others – i.e. two or more of the parties have a reasonable chance of victory there – and so are the focus of much campaigning attention: in others the outcome is virtually certain long before the election is even called. If – as seems to be the case – people are to some extent affected in their voting decisions by the nature of the local contest and the campaigning to which they are subject, then it is important that the survey is representative of such campaigns.

In evaluating the response to the BES, therefore, we are concerned not only with whether the realised sample is representative of the population as a whole but also whether the places in which they are sampled are representative of the types of local contest. In this paper, we use an ecological approach – made feasible by a process of linking the addresses of all those sampled in the BES to small-area census data – to identify the characteristics of the places in which the respondents and non-respondents live. This gives greater insight than available to date on the characteristics of those two groups, and allows an evaluation of the representativeness of the BES respondents. The analysis is undertaken within a framework adapted from the study of abstentions in the UK, which offers possible clues to the characteristics of people who respond/refuse to respond to electoral surveys: the underpinning argument is that the same motivations stimulate both responses – those who are more likely to abstain in an election are also more likely to decline to participate in a survey linked to that event. Because of difficulties with census data for Scotland, this analysis covers only England and Wales.

Expectations

The substantial decline in turnout at recent British general elections – notably between 1997 and 2001 – has stimulated considerable interest in the nature of the decision whether to abstain (see, for example, Franklin, 2004). Most studies of the issue take one of the following approaches (see, for example, Pattie and Johnston, 1998):

- *Rational choice theory*, which is based on the axiom that individuals weigh up the costs and benefits of undertaking any action, such as voting. People should

be more prepared to commit the time and other resources to voting at an election if they think that they can affect its outcome, so the closer the contest is thought to be, the smaller the number of abstentions. This situation applies not only nationally, across the electorate as a whole, but also within individual constituencies: turnout should be greater in the more marginal contests.

- *Sociological theories* are based on the belief that people occupying different social positions within society – e.g. in different social classes – have varying voting propensities. Turnout tends to be greater among higher income groups, those in white-collar occupations, and middle-aged and older people – in general those with more resources available that they can commit to the decision-making process, and also those with greater commitments to the political process.
- *Theories of political efficacy* focus on differences between individuals (and the groups of which they are members) in their alienation from the political process: those who feel that electoral politics and their outcomes have little impact on their lives, who feel that the political parties pay little or no attention to their concerns, and who feel that the outcome of an election is unlikely to change anything are most likely to abstain. The degree of civic commitment is closely linked to a range of forms of political participation, including voting at elections (Pattie, Seyd and Whiteley, 2004).

Of these three, the first two can readily be transferred to the study of participation in political surveys, using ecological data. According to rational choice theory, people should be more-or-less interested in the election and its outcome according to the situation in their home constituency. If people in marginal constituencies are more likely to vote than are those living in safer seats, it could well be that they are also more likely to agree to participate in an electoral survey. There should then be a geography of response/non-response to the survey reflecting the geography of the contest.

Sociological theories suggest that different types of people are more or less likely to abstain at an election. Since many of those types tend to concentrate in different types of residential area – at a variety of spatial scales – then this propensity to abstain should have geographical correlates: areas with relatively high proportions of people from the types characterised by low turnout at elections should have relatively high abstention rates. The theories of political efficacy can less readily be translated into spatial-ecological hypotheses, however, since the characteristics of the alienated individuals are not necessarily linked to the socio-economic and -demographic variables collected in censuses and used to characterise local-area populations. Some are, however: there has been considerable recent concern about low levels of electoral turnout among younger voters, for example, because of their feelings of political (in)efficacy. Such people are likely to reflect those feelings by declining to participate in electoral surveys and to the extent that they are concentrated in particular areas, this could be discernible through the ecological approach adopted here.

Work on political participation provides some tentative hypotheses to guide this study of survey response/non-response, therefore. In general, we expect to find higher response rates in higher-status areas and in relatively marginal constituencies. If these expectations are confirmed, they give us some insights into who the non-respondents are. (A great deal is known about respondents, of course, from the information they

provide at interview.) From this, it should be possible to draw conclusions about the representativeness of a survey with a response rate only slightly above 50 per cent.

The survey and other data

A face-to-face questionnaire survey of a nationally-representative sample of the British population has been a core feature of all British Election Studies since they were inaugurated by David Butler and Donald Stokes in the 1960s. For the 2001 and 2005 surveys, organised at the University of Essex, this survey has been conducted in two waves, one before the election and the period of intense campaigning after Parliament has been prorogued (the pre-campaign survey), and the other immediately after the election (the post-election survey). This has a longitudinal design, with as many as possible of those interviewed in the pre-campaign wave being interviewed again in the post-election wave, and a top-up sample taken to ensure that the latter is as representative as the former. In this paper, we analyse the characteristics of the pre-campaign survey only.

As with all previous BES surveys, the 2005 pre-campaign survey used a stratified clustered design with the basic stratification – as in earlier studies – done by region: 128 constituencies were selected randomly, stratified by standard region (of which there are 11). Within Scotland, Parliamentary electoral regions were used (these are the constituencies used for the top-up list contests in elections to the Scottish Parliament),³ and in Wales three groups of constituencies of equal size were used defined by their percentage of Welsh speakers. In addition, for the first time in the BES series, in order to ensure that marginal constituencies were adequately covered, constituencies were initially divided into two strata – marginal and non-marginal (with marginality defined as the difference between the first- and second-placed parties in that constituency at the previous election: marginal constituencies are those with majorities of less than 10 percentage points). These marginality strata were used in the first stage of the sampling, with region in the second stage. A third stage – termed population density – was then introduced. Constituencies were ordered by their number of ‘delivery points’ (separate addresses in the post-code register) and weightings applied so that small constituencies were not over-represented relative to larger ones.⁴ Constituencies were then selected with probability proportionate to the number of ‘delivery points’ in Scotland and Wales (both of which have a number of small constituencies) whereas in England marginal constituencies were slightly over-sampled (26 constituencies instead of 23-24).

Because of a requirement (part of the ESRC’s brief to those conducting the survey) to boost the samples from Scotland and Wales, the distribution of sampled constituencies was not proportional to the number in each region. The consequent under-representation of England is corrected by weighting the samples (the weighted percentages from each country are virtually identical to their percentages of the total electorate).

³ As in all previous BES surveys, the area north of the Caledonian Canal was excluded: this currently includes six Parliamentary constituencies with average electorates of 48,155, compared with 67,227 for the other 53 Scottish constituencies.

⁴ The full sampling and subsequent weighting procedure are described in a document available on the BES website at (<http://www.essex.ac.uk/bes/2005/NatCen%20Data/Note%20on%20sampling%20050623.doc>)

Within each of the constituencies, further clustered samples were taken. In each, two electoral wards were randomly selected proportional to their number of 'delivery points'. (Wards are the territorial units deployed for local government elections, and also for the construction of Parliamentary constituencies. They vary widely in their size: in Greater London, for example, they average 7 electors each; in some of the large cities, such as Birmingham, they are larger – Birmingham's wards have an average of 12 electors; in rural areas they are very much smaller – in Cornwall, for example, they average only 3.) In England 24 addresses were chosen from each ward, using a random selection from the post-code directory and then a random selection of one individual from each address was picked. (If the address contained multiple dwelling-units, one was selected at random.) In Scotland and Wales 27 addresses were selected per ward. The resultant sample thus was taken from 256 separate wards.

Knowing the postcode for each individual sampled allowed us to adapt the method of bespoke neighbourhoods developed in the 1990s and used in analyses of the 1997 BES (MacAllister et al, 2001) and of 1997 voting as evinced in the British Household Panel Study (Johnston et al, 2005). In those studies, matching files provided by the Office of National Statistics were used to locate each sampled individual respondent in the relevant enumeration district (ED: the small area used for census data collection and distribution, with an average population just under 500); bespoke neighbourhoods of different sizes were then constructed by combining neighbouring EDs, to produce the areas containing the 500, 1000, 200 etc. individuals living closest to each respondent's home. Census data for 1991 were then obtained for those areas to characterise each respondent's local milieu and used to test hypotheses regarding neighbourhood effects. (See also Buck, 2001.)

The 2001 census used a different architecture, and data have been provided at a range of spatial scales comprising, in England and Wales (unfortunately a different architecture and data release strategy has been developed for Scotland, so that the analyses here relate only to England and Wales):

- *Output Areas (OAs)* of which there are 175,434 in England and Wales, with an average population of 297 persons (standard deviation 72);
- *Lower Layer Super Output Areas (LLSOAs)* of which there are 34,378 in England and Wales, with an average population of 1,513 persons (standard deviation 203);
- *Middle Layer Super Output Areas (MLSOAs)* of which there are 7,194 in England and Wales, with an average population of 7,234 persons (standard deviation 1320).

In addition, ONS propose data for

- *Upper Layer Super Output Areas (ULSOAs)* – of which there are intended to be c.2000, which will mean an average population of c.26,000, which is too large to be of any use on neighbourhood context studies. These data are not yet available, and have not been used here.

The census data are also available for four other spatial units:

- *Census ward*, which is the basic unit for the conduct of local government elections and much public service delivery. Data for the wards that were extant at the time the census was taken are available – there were 9278, with an average population of 5605 (standard deviation 4038);

- *Electoral ward*: many ward boundaries have been changed as part of the on-going review of local government electoral arrangements and the OA census data have been assembled into the set of wards that was in place at the time of the 2005 general election – there were 8800, with an average population of 5909 (standard deviation 4066);
- *Parliamentary constituencies* – of which there were 569 in England and Wales, with an average population of 91,398 (standard deviation 10872); and
- *Urban areas* – these are defined as the built-up areas as displayed on Ordnance Survey maps, and OA data have been assembled for each separate place – including places within major conurbations.

In this study, every one of the 4884 postcodes in the sample taken for the 2005 BES pre-election survey in England and Wales has been matched into the above seven spatial categories, and census data downloaded to provide information about the characteristics of the area/place/ward/constituency with which that address is associated. These data have been used to produce 61 derived variables indicating the characteristics of each area, such as their population density, the percentage of the population aged 75 and over, and the percentage of the workforce in various occupations. In addition, data on the electoral characteristics of the constituencies have been added to the data set.

We thus have 61 separate pieces of information on the characteristics of each area within which each sampled address was placed, at seven spatial scales, plus electoral data at one of those scales. With these, we can explore whether there are differences between the areas containing the addresses of respondents and non-respondents to the 2005 BES pre-campaign survey, as an exploratory analysis of the differences between those two types.

The constituency pattern

As indicated above, rational voting theory suggests that people should be more prepared to make the effort to vote in a marginal than in a safe constituency, and in those where the local contest is more important in the national context. Does this argument extend to willingness to participate in an electoral survey? Were people living in areas where there was more pressure to participate in the election also more likely to respond to an electoral survey?

To address that question, Tables 1-2 look at the pattern of responses to the survey against a number of constituency characteristics, defined by the result there at the previous election in 2001.⁵ The first block in Table 1 looks at the percentage distribution of the five survey outcomes according to which party won the constituency at the 2001 contest in which the respondent lived in 2005. For the two main categories – respondents and refusals – there is virtually no difference. (The index of dissimilarity between the two distributions – which can range from 0.0 (no difference) to 100.0 (total difference) – is only 2.2.)⁶ Slightly more of those who

⁵ All of the data about the constituency contests used here are taken from the British Parliamentary Constituency Database 1992-2005 kindly made available by Professor Pippa Norris (see <http://ksghome.harvard.edu/~pnorris/Data/Data.htm>).

⁶ The index of dissimilarity is a measure of the unevenness between two distributions across a set of observations. Formally $ID_{xy} = \{[\sum |X_{ik} - Y_{ik}|] / 2\}$ where X_k is the percentage of the total of X in

refused lived in Labour- or Liberal Democrat-held seats relative to those who gave an interview, with the reverse situation for Conservative-held seats.

Turning to the type of contest – which parties occupied first and second places in the constituencies after 2001 – the second block in Table 1 similarly shows very little difference across all five categories: the index of dissimilarity comparing the distributions of respondents and refusals is again only 2.2. And the same is the case with the degree of marginality in the 2001 result, shown as five categories for the difference between the first- and second-placed parties in the percentage of the votes cast that they obtained: the index of dissimilarity between the interview and refusal distributions is 2.8. Slightly more of the ‘no contacts’ are to be found in the safe seats (those with a victory margin of 20.0 points or more), but this may be no more than random error in a small sampled number and unlikely to be of substantive significance.

Table 2 combines the three elements examined separately in Table 1, looking at the patterns according to which parties occupied first- and second-places in the constituencies, and what the margin of victory was. Here the Ns are considerably smaller, but there is still no convincing evidence that the sample of persons interviewed is unrepresentative of the total sample of addresses. The indices of dissimilarity for the four interview-refusal comparisons are 10.1, 2.7, 1.3 and 6.8 respectively for the four ‘battleground’ types shown (the others contain very few constituencies and so are excluded). By far the largest difference between the two columns is that of 7.9 percentage points between interviews and refusals in the Conservative-Labour constituency contests with majorities of 10-14.9 points in 2001.

These findings suggest that those who refused to respond to the BES survey were not distributed in a different manner across the constituencies than those who did agree to be interviewed, when the constituencies are characterised according to the nature of the local electoral contest. There are some major differences among the other three, much smaller, groups but these are of little substantive import and are likely to be the consequence of small numbers in those categories.

Area characteristics

Sociological theory was used above to suggest that different types of people may vary in their willingness to respond to an electoral survey. If that is the case, then areas with different population characteristics should vary in their percentages of those who agreed to be interviewed and those who refused. (We did not anticipate major differences in the three other categories, mainly because of their small size relatively to the other two, which are the main focus of the investigation.)

As a first exploration of possible differences, we conducted independent-sample t-tests of the differences between the average value for respondents and refusals on all 61 of the census variables, at each of the scales. Of the 427 tests conducted only 69 indicated significant differences at the 0.05 level or better. All are shown in Table 3. Only one variable – the percentage of people living in detached homes – showed a

observation k , Y_k is the percentage of the total of Y in observation k , summation is over all k units, and ID_{xy} is the index of dissimilarity between the distributions of X and Y over all k .

significant difference at all seven scales, with a lower value for the refusals than the respondents: people living in areas with relatively large numbers of detached homes were less likely to refuse to be interviewed than those living in areas with fewer such homes. There were 6 significant differences for the percentage of households with 3 or more cars – again with lower averages for those who refused; and there were five for population density (though the pattern with this variable was not consistent across all scales: in four, refusals came from higher density areas, but not with electoral wards, for reasons that are totally unclear), for the percentage employed in agriculture, and for houses with 7 or more rooms.

Three general features can be identified among the significant differences shown in Table 3:

1. People who refused to be interviewed were less likely to come from relatively lower density areas, those where agricultural employment was relatively common, where there were above-average percentages of detached homes and large homes (with 7 or more rooms), and high levels of car availability;
2. People who refused were more likely to live in areas with relatively large percentages of ill people; and
3. People who refused were more likely to live in areas with relatively high percentages of homes rented from local councils and with lone-parent families.

Together, these suggest that responses to the survey tended to be more positive in rural and suburban areas and that refusals to participate were more likely in areas of relatively socio-economic disadvantage and in areas with large numbers of ill persons.

To take this analysis further, we undertook factor analyses of the census data to identify the major dimensions of the socio-spatial structure of England and Wales at various scales: factor analyses were not conducted for the urban areas, however, because of the massive variation in settlement size, from London with over 8 million people to villages with only a few hundred. After exploratory studies to eliminate variables with high degrees of collinearity with others retained in the analyses plus those showing little spatial patterning, we selected 34 from the larger set of 61. The analyses were conducted for all of the areas at each scale and not just those which included addresses in the BES sample – i.e. all 175,434 OAs and all 569 Parliamentary constituencies. All factors with eigenvalues exceeding 1.0 were extracted, and these were then subjected to a direct oblimin rotation to achieve the best-available approximation to simple structure.

Seven factors were separately identified at the LLSOA scale, and six at each of the others. They were labelled according to the pattern of high loadings, and the names given to each are in Table 4. Three factors are common to all six scales: *ethnicity*, with high loadings on the percentage of the population born outside the UK, with black or South Asian ethnicity, non-Christian religions, as well as population density and the percentage living in high density housing (more than one person per room); *age*, with high loadings on the percentage of the population aged over 75, who were retired, who lived alone, and who owned their homes outright; and *rural*, with high loadings on the percentage working in agriculture, in the petit bourgeoisie, and with large detached homes. The others have the same basic patterns but with minor differences across scales. At most scales, for example, there is a *mobility/students* factor, with high loadings on the percentages of people who have migrated recently

and of students; at the smallest scale, however, those two sets of variables load on separate factors – showing that areas of high mobility are not necessarily also areas with high percentages of students. Finally, at some scales there is a single *socio-economic status and disadvantage* scale, with high loadings for variables such as unemployment and lone-parent families indicating disadvantage and others such as educational qualifications and employment in finance indicating high-status workforces. At others, the two groups load on separate factors.

The scores on these factors were divided into deciles, allowing a simple characterisation of the areas. Nationally, ten per cent of the areas at each scale were in each decile: Tables 5-10 show the distributions of the areas according to whether those surveyed in the BES were interviewed or refused. If the sample is representative of the various types of social area, and the respondents and refusals are equally distributed across all types, then 10 per cent of each group should be identified with each decile. Any major differences from such an even distribution would show that the sample was not representative of all areal types. Further, if the distributions of the respondents and refusals were different, this would indicate that they are drawn from different populations.

The general conclusion to be drawn from these tables is that there is little difference between the distributions of interviewees and refusals on any of the factor dimensions at any of the scales. Thus in Table 5, the index of dissimilarity for Factor 1 (Socio-economic status) is only 3.0 (i.e. only 3.0 per cent of the refusals would have to be reallocated for the two distributions to be exactly the same across the deciles). The distributions of those interviewed and those who refused are not entirely even across the ten categories, however. With Factor 2 (Ethnicity), for example, just under 4.0 per cent are in the tenth decile (i.e. the areas with the highest proportions of people claiming non-white ethnicity and adherence to non-Christian religions). The implication is that the survey as a whole under-represented such areas (presumably because of its clustered sampling design), but that there was no relative concentration of either people who agreed to be interviewed in such areas or those who refused: the average index of dissimilarity across the seven factors was only 3.9.

The indices of dissimilarity are similarly small for all seven factors at the LLSOA scale (Table 6). All of the distributions are fairly even across the deciles (although one cell in the entire table has a value of 14.9 and one is as low as 4.0, most are fairly close to the expected value of 10 per cent), suggesting that the sampling procedure obtained a reasonably good representation of most types of area: those most under-represented are the areas of high ethnicity (Factor 1, 10th decile), high socio-economic status (Factor 2, 9th and 10th deciles), high mobility (Factor 4, 1st decile), and high socio-economic disadvantage (Factor 6, 9th and 10th deciles). Importantly for the current exploration, however, such under-representation – and the counter-balancing over-representation elsewhere in the distribution – is virtually the same for the interviewed and the refusals. There is no evidence of major differences in the types of area these two groups live in.

The same conclusion can be drawn from the indices of dissimilarity derived from comparison of the distributions at the other scales (Tables 6-10): the average over all six sets is just 4.4. Although the sample as a whole may over-represent certain types of area and under-represent others (areas of high ethnicity tend to be under-

represented, for example), there is no evidence that within the sample those who refused come from substantially different types of area than those who agreed to be interviewed. We therefore infer, from these ecological data, that people who refused to be interviewed in the 2005 BES pre-campaign survey were no different in their socio-economic and demographic characteristics from those who declined the opportunity.

Finally, how about people living in places of different sizes. Are those who live in the countryside and in small settlements less likely to refuse an interview than those in the – often portrayed as busier, more stressed – big cities? Table 11 shows the distribution of the five response categories according to a settlement-size classification. Again, the differences between those interviewed and those who refused are small – an index of dissimilarity of 4.5 – although the direction of the differences does show a clear pattern. Places with fewer than 25,000 residents have slightly higher rates of people agreeing to be interviewed whereas the larger places have slightly higher refusal rates. The other categories are much smaller, but in general also tend to be somewhat ‘biased’ towards the larger settlements: failure to make contact was more likely in the larger settlements, for example, as were addresses that were out of scope and, to a lesser extent, those categorised as ‘other’. In general, therefore, there was something of an urban-rural (or big city-small town) divide in response rates, but this was not large.

Modelling responses

As a more formal evaluation of that conclusion, this final section reports on attempts to model the pattern of response to the 2005 BES pre-campaign survey. Logistic regression was used, as the dependent variables were the five binary response categories. The independent variables were:

- Three categorical sets of variables indicating the electoral situation in each sampled address’s constituency – winner in 2001, margin of victory in 2001 and ‘battleground’ after 2001 (which parties occupied first and second places);
- The categorical set representing settlement size (with rural as the comparator); and
- Factor scores for all factors at the LLSOA, MLSOA, Census Ward and Constituency scales.⁷

The variables were entered in a stepwise forward procedure, using the Wald coefficient (a measure of partial correlation for either a single, continuous variable or a set of mutually-exclusive categorical variables) to determine whether a variable should be included or not.

The results are in Table 12. There are significant relationships in every one of the five regressions. There was a greater probability of *achieving an interview* at addresses with low levels of mobility (this factor is negatively related to high levels of mobility: Table 4) and high levels of rurality at the LLSOA scale, for example, indicative of the urban-rural differential noted above, but at the MLSOA scale higher probabilities of achieving an interview occurred in areas with relatively high levels of mobility and

⁷ There is (not surprisingly) very high collinearity among the scores for Census and Electoral Wards, so that the scores for the latter were excluded.

percentages of students and also relatively young populations. There was also a higher probability of achieving an interview in constituencies with large percentages of Blacks and high levels of socio-economic disadvantage. Turning to *refusals*, the only significant relationships showed higher probabilities in the less rural areas at the LLSOA scale, and in areas with low percentages of people drawn from ethnic minorities and those with low percentages of students at the MLSOA scale. (A further regression, not reported here, which contrasted interviews with refusals [i.e. excluded the other three categories] had significant relationships with three factors only – socio-economic disadvantage at the LLSOA scale, students/mobility at the MLSOA scale, and socio-economic disadvantage at the Census Ward scale – but with a Nagelkerke R^2 of only 0.007 suggesting that the two groups were largely indistinguishable in their geography.)

Turning to the three other, much smaller, response categories, the pattern of *no contacts* shows higher probabilities in areas of high mobility and high socio-economic disadvantage at the LLSOA scale, and in areas of high ethnicity, high socio-economic status and low socio-economic disadvantage at the ward scale. For *other responses* (mainly those involving contacted individuals who could not be interviewed), there were only two significant relationships – with high levels of ethnicity and with low levels of socio-economic status at the Ward scale. Finally, the pattern of *out-of-scope* addresses showed greater probabilities of such an occurrence in areas of high ethnicity and mobility at the LLSOA scale, more old people at the MLSOA scale, greater rurality at the Ward scale, and greater socio-economic disadvantage at the Constituency scale.

Although these relationships suggest some patterning to the responses to the survey – notably the difference between more rural areas on the one hand and higher density urban areas where levels of ethnicity, socio-economic disadvantage and mobility are high, on the other – their statistical significance as shown by the regression coefficients should be tempered by the goodness-of-fit measures at the foot of Table 12. The figure for ‘% correctly classified’ (i.e. the percentage of all respondents for whom the probability of being in the correct category exceeds 0.5) is over half in every regression, and very large in three. But in four of the five, the second goodness-of-fit row shows none of those in the particular category being studied – i.e. the response rate coded 1 and indicated at the head of the column – was correctly classified: the regression for refusal, for example, allocated a probability of 0.5 or more to none of those in the sample who did respond. In other words, the regressions were a very poor fit in terms of successfully identifying the correct category for any of those other than the successful interviews (as the Nagelkerke R^2 values make abundantly clear). And even with those where a successful interview occurred, although 86 per cent of those who were interviewed were correctly placed in that category (i.e. had a probability of 0.5 or higher), only 20.9 per cent of those addresses that didn’t provide an interview were correctly classified.

Conclusions

Just as low turnouts at elections induce analysts and commentators to wonder whether the outcome is a true reflection of the population’s opinions, so some wonder whether low response rates to electoral surveys similarly mean that those surveys in some way present a biased picture of the attitudes, opinions and behaviours that are the subjects

of the survey. Response rates to electoral surveys have fallen in recent years,⁸ which raises issues of their representativeness.

It is difficult to assess a survey's representativeness of the population being sampled when little is known of those individuals who declined to be interviewed. Are respondents and non-respondents very different? To address that question for the first time in the context of the British Election Study surveys, we have conducted ecological data analyses of where the respondents and non-respondents to the 2005 pre-campaign face-to-face survey lived, at a variety of spatial scales ranging from the immediate local neighbourhood of the sampled address to the Parliamentary constituency. Although some statistically significant differences have been identified, they have been small and of little apparent substantive significance. There are slightly better chances of getting an interview from the selected individual at a sampled address in more rural areas and smaller towns than in big cities – and especially than in neighbourhoods where the population is highly mobile, where socio-economic disadvantage is relatively common, and where there are large percentages of people with non-white ethnicity. But the variations in those chances are not large and the overall conclusion of this ecological analysis must be that the relatively low response rate of 56 per cent to the BES pre-campaign survey in England and Wales has not produced a substantially biased pattern of interviews within the overall sample. There is no clear evidence that the people who agreed to give an interview differ from those who declined. Similarly, although the small numbers of addresses where no contact could be made or where the person contacted could not be interviewed were also slightly concentrated in certain types of area, there was no substantial cause of concern that these were in any way biasing the responses.

Although most electoral surveys – including the BES – have as their major goal obtaining a representative sample of the national electorate, other criteria are also important in taking the sample. In particular, given that under first-past-the-post systems an increasing amount of campaigning attention is paid to the marginal seats where the fate of the incumbent government hangs, it is important to get a representative sample of such constituencies – especially with a stratified, clustered sample design. On this criterion, the analyses here have raised no cause for concern with the 2005 BES: the pattern of interviews and refusals was basically the same across various constituency categories.

The overall conclusion to be drawn from these analyses is a positive one for those who designed and those who will use the 2005 BES: the low response rate has not apparently resulted in a biased pattern of interviews which may call conclusions drawn from the survey data into some doubt. There is, however, one finding – largely tangential to the focus of our concern here – that raises wider issues. We have shown that the individuals who provided an interview and those who refused to come from similar types of area. But we have also shown that both groups are not representative of all types of area. Table 6, for example, shows that only just over 4 per cent of the sampled addresses were in areas having high levels of ethnicity at the LLSOA scale rather than the expected 10 per cent (the data refer to deciles of all LLSOAs in the country), that only about 6.5 per cent were in areas of high socio-economic status,

⁸ Harold Clarke (personal communication) tells us there is a correlation of 0.74 between general election turnout and the response rate to the relevant BES since 1960!

and also areas with high levels of spatial mobility and percentages of students. Even more worryingly, Table 9 shows percentages well below 10 in the first decile for every factor in the Parliamentary constituency analyses, as well as substantially below ten in the tenth decile for two as well. The addresses sampled are thus not representative of different types of area within the country at a variety of spatial scales, especially the larger areas. Rather than conclude that a high refusal rate does not bias the representativeness of the sampled addresses, we can only conclude that it does not bias it any further than does the sample design.

Acknowledgements

The analyses conducted here could not have been conducted without the assistance of the BES team, which sanctioned release of the postcodes for each sampled address to be deployed in a form which would in no way compromise the confidentiality of the survey, and to Katerina Thomson of the National Centre for Survey Research, which conducted the BES survey, and who collaborated fully in the project. We are particularly grateful to David Sanders for funding the data processing which enabled all of the data sets to be assembled, and to Alison Smith who did all of that work with great care and precision.

References

- Buck, N. H., 2001, Identifying neighbourhood effects on social exclusion. *Urban Studies* 38: 2251-2275
- Franklin, M. N. 2004: *Voter Turnout and the Dynamics of Electoral Competition in Established Democracies since 1945* (Cambridge: Cambridge University Press)
- Johnston, R. J., Propper, C., Burgess, S., Sarker, R., Bolster, A. and Jones, K. 2005: Spatial scale and the neighbourhood effect: multinomial models of voting at two recent British general elections. *British Journal of Political Science* 35: 487-514.
- MacAllister, I., Johnston, R. J., Pattie, C. J., Tunstall, H., Dorling D. F. L. and Rossiter, D. J. (2001) Class dealignment and the neighbourhood effect: Miller revisited. *British Journal of Political Science* 31:41-60.
- Pattie, C. J. and Johnston, R. J. 1998: Voter turnout at the British general election of 1992: rational choice, social standing or political efficacy? *European Journal of Political Research* 33: 263-283.
- Pattie, C. J., Seyd, P. and Whiteley, P. 2004: *Citizenship in Britain: values, participation and democracy*. Cambridge: Cambridge University Press.
- Scarborough, E. 2000: The British Election Study and electoral research. *Political Studies* 48: 391-414.

Table 1. The distribution of BES survey response categories according to the electoral characteristics of the constituencies

	Interview	NoContact	Refused	Other	OutScope
<i>Winner in 2001</i>					
Conservative	25.0	19.2	23.1	18.9	21.5
Labour	67.5	69.0	68.8	73.8	68.5
Liberal Democrat	6.5	9.4	7.4	5.8	7.8
PC	1.0	2.4	0.7	1.5	2.2
N	2656	287	1363	206	372
<i>Margin of Victory in 2001 (percentage points)</i>					
0 - 4.9	13.4	8.4	12.0	11.2	7.5
5.0 - 9.9	18.0	12.9	18.0	17.0	20.2
10.0 - 14.9	11.7	13.6	12.4	10.7	12.6
15.0 - 19.9	13.9	8.7	12.5	13.6	12.1
20.0<	43.0	56.4	45.1	47.6	47.6
N	2656	287	1363	206	372
<i>Type of Contest ('Battleground': parties in first and second place, 2001)</i>					
Con-Lab	16.0	13.6	16.0	12.1	16.7
Con-LD	9.0	5.6	7.1	6.8	4.8
Lab-Con	55.3	56.1	55.9	56.8	55.1
Lab-LD	5.5	7.7	6.1	8.7	7.8
Lab-PC	6.6	5.2	6.8	8.3	5.6
LD-Con	5.9	5.6	6.5	5.8	5.9
LD-Lab	0.6	3.8	1.0	0	1.9
PC-Lab	1.0	2.4	0.7	1.5	2.2
N	2656	287	1363	206	372

Table 2. The distribution of BES survey response categories according to the 'battleground' status and marginality of the constituencies

Margin	Interview	NoContact	Refused	Other	OutScope
<i>Conservative-Labour</i>					
0 - 4.9	6.4	0.0	7.8	8.0	3.2
5.0 - 9.9	26.1	10.3	22.9	28.0	32.3
10.0 - 14.9	15.8	28.2	19.7	16.0	32.3
15.0 - 19.9	22.6	12.8	14.7	28.0	8.1
20.0<	29.2	48.7	34.9	10.0	24.2
<i>Conservative-LibDem</i>					
0 - 4.9	27.2	18.8	25.8	14.3	5.6
5.0 - 9.9	23.0	62.5	24.7	28.6	16.7
10.0 - 14.9	12.6	6.3	11.3	28.6	11.1
15.0 - 19.9	0.0	0.0	0.0	0.0	0.0
20.0<	37.2	12.5	38.1	28.6	66.7
<i>Labour-Conservative</i>					
0 - 4.9	11.8	5.0	10.6	10.3	9.3
5.0 - 9.9	17.7	13.7	18.6	14.5	22.0
10.0 - 14.9	11.3	7.5	11.8	9.4	7.3
15.0 - 19.9	16.7	11.8	16.7	15.4	16.6
20.0<	42.4	62.1	42.3	50.4	44.9
<i>LibDem-Conservative</i>					
0 - 4.9	17.9	31.3	12.5	16.7	9.1
5.0 - 9.9	33.3	6.3	33.0	58.3	31.8
10.0 - 14.9	14.1	50.0	18.2	0.0	16.3
15.0 - 19.9	16.7	6.3	13.6	25.0	16.7
20.0<	17.9	6.3	22.7	0.0	18.4

Table 3. Results of independent-sample t-tests into the differences between the average characteristics of areas lived in by those who agreed to be interviewed in the 2005 BES and those who refused,

Variable	Area Scale						
	OA	LL	ML	CW	EW	Const	Urb
Population density	+	+	*	+	-	*	+
Households with no children	*	*	*	*	*	*	-
Not in good health	*	*	*	+	+	*	*
Limiting long-term illness	*	*	*	+	*	*	*
Permanently sick/disabled	*	*	+	+	+	*	*
Petit bourgeoisie	-	-	-	*	-	*	*
Agriculture	-	-	-	-	-	*	*
Finance	+	+	+	*	*	*	*
Detached homes	-	-	-	-	-	-	-
House/bungalow	*	*	*	*	*	-	*
Council rented	*	+	+	+	*	*	
Student homes	-	-	-	*	-	*	*
No car	*	*	*	+	+	+	+
3+ cars	-	-	-	-	-	-	*
One-person pensioner	*	*	*	+	*	*	*
One-person, non-pensioner	*	*	*	*	*	+	*
Lone-parent households	*	*	*	+	*	*	+
Cohabiting families	*	*	*	*	*	+	*
Houses 7+ rooms	-	*	*	-	-	-	-
SES 3	-	-	-	*	-	*	*
Full-time employment	+	+	+	*	*	*	*
15 and under	*	*	*	*	*	*	+
First-time voters	*	*	*	*	+	*	+
Eligible voters	*	*	*	*	*	*	-

OA – Output Area; LL – Lower Level Super Output Area; ML – Middle Level Super Output Area; CW – 2001 Census Ward; EW – 2004 Electoral Ward; Const – Parliamentary Constituency; U – Urban Area.

+ refusal higher; - refusal lower; * – insignificant at the 0.05 level

Table 4: The factor analysis dimensions

<i>Factor</i>	<i>OA</i>	<i>LLSOA</i>
1	Socio-economic status (-ve)	Ethnicity
2	Ethnicity	Socio-economic status
3	Age	Age
4	Mobility	Mobility (-ve)
5	Mobility/students	Mobility/students
6	Socio-economic disadvantage	Socio-economic disadvantage
7	Rural	Rural
<i>Factor</i>	<i>MLSOA</i>	<i>Census ward</i>
1	Ethnicity	Ethnicity
2	Socio-economic status	Socio-economic status
3	Mobility/students	Age
4	Age	Mobility/students
5	Socio-economic disadvantage	SE disadvantage (-ve)
6	Rural	Rural
<i>Factor</i>	<i>Electoral ward</i>	<i>Constituency</i>
1	Ethnicity	Ethnicity
2	SE status/disadvantage	SE status/disadvantage
3	Age	Mobility/students
4	Mobility/students (-ve)	Age
5	Rural	Black/SE disadvantage
6	Black/SE disadvantage	Rural

OA – Output Area; LL – Lower Level Super Output Area; ML – Middle Level Super Output Area; CW – 2001 Census Ward; EW – 2004 Electoral Ward; Const – Parliamentary Constituency

Table 5. Distribution of those who were interviewed in the 2005 BES pre-campaign survey and those who refused, by deciles of the seven factors identified at the OA scale.

Decile	1	2	3	4	5	6	7	8	9	10
Factor 1 (Socio-economic status – ID 3.0)										
I	6.4	9.1	9.4	9.3	11.2	11.2	11.1	10.7	9.5	12.2
R	7.2	8.4	9.6	8.7	11.6	11.4	9.9	12.0	9.5	11.7
Factor 2 (Ethnicity – ID 4.7)										
I	11.5	11.3	15.2	11.6	12.3	10.8	8.7	8.0	6.9	3.7
R	11.8	13.2	13.8	11.2	10.1	11.4	9.7	7.3	7.7	3.8
Factor 3 (Age – ID 4.1)										
I	10.3	10.1	9.8	9.1	9.0	9.7	10.5	10.8	10.5	10.1
R	11.6	10.4	9.8	9.4	7.1	8.6	9.9	10.3	11.3	11.6
Factor 4 (Mobility – ID 3.4)										
I	6.3	6.7	9.9	11.6	13.7	11.5	8.2	11.2	11.0	9.9
R	7.6	6.9	10.6	11.2	11.3	11.4	8.8	11.7	11.2	9.4
Factor 5 (Mobility/students – ID 4.2)										
I	11.6	11.4	9.2	11.4	9.9	9.8	10.1	8.8	9.3	8.3
R	12.5	10.3	9.1	10.9	9.7	8.7	9.5	11.9	8.8	8.6
Factor 6 (Socio-economic disadvantage – ID 2.4)										
I	12.3	10.1	9.4	11.2	9.9	10.7	9.8	10.7	8.3	7.6
R	12.3	9.4	10.6	11.1	9.9	10.6	11.1	10.6	7.6	6.9
Factor 7 (Rural – ID 5.4)										
I	8.2	7.8	6.7	8.5	7.6	10.4	10.8	12.0	15.0	12.9
R	9.8	7.5	9.4	8.9	7.9	9.2	10.0	11.5	12.5	13.3

Table 6. Distribution of those who were interviewed in the 2005 BES pre-campaign survey and those who refused, by deciles of the seven factors identified at the LLSOA scale.

Decile	1	2	3	4	5	6	7	8	9	10
Factor 1 (Ethnicity – ID 2.4)										
I	9.0	11.7	12.4	13.9	11.1	9.7	8.8	9.2	10.0	4.1
R	9.8	10.6	12.1	14.5	10.3	10.2	8.7	9.5	10.3	4.0
Factor 2 (Socio-economic status – ID 5.3)										
I	12.0	11.1	10.6	9.9	8.3	10.7	12.5	10.5	8.2	6.3
R	12.5	11.9	10.8	9.5	10.3	10.2	9.9	8.7	8.9	7.3
Factor 3 (Age – ID 3.4)										
I	7.8	8.7	10.2	8.3	10.5	10.7	10.5	9.5	13.1	10.7
R	9.0	9.3	11.3	9.1	10.0	11.4	9.8	7.8	12.7	10.6
Factor 4 (Mobility – ID 4.7)										
I	6.1	10.0	10.9	12.8	8.6	11.3	9.9	10.1	11.7	8.7
R	7.4	8.1	10.3	14.7	8.1	10.3	10.3	10.7	11.0	8.9
Factor 5 (Students/mobility – ID 2.1)										
I	9.8	9.4	11.4	9.8	9.6	10.4	12.1	9.4	9.5	8.6
R	9.9	9.0	11.6	9.8	10.3	9.9	12.0	9.0	10.6	7.9
Factor 6 (Socio-economic disadvantage – ID 4.8)										
I	10.2	10.4	9.9	11.8	11.4	9.4	10.4	11.1	8.2	7.3
R	9.8	10.1	10.0	10.6	9.8	12.8	10.9	9.8	9.0	7.4
Factor 7 (Rural – ID 6.0)										
I	9.1	8.4	7.8	8.1	11.9	9.0	9.8	13.2	11.9	10.9
R	11.7	9.7	8.3	8.7	9.8	7.2	10.1	14.9	11.2	8.5

I – interviewed; R – refused; ID – index of dissimilarity.

Table 7. Distribution of those who were interviewed in the 2005 BES pre-campaign survey and those who refused, by deciles of the six factors identified at the MLSOA scale.

Decile	1	2	3	4	5	6	7	8	9	10
Factor 1 (Ethnicity – ID 4.5)										
I	9.6	12.5	13.2	9.8	10.8	10.4	11.6	7.0	11.0	4.0
R	8.7	12.8	11.6	8.4	10.9	12.5	12.3	8.1	11.2	3.4
Factor 2 (Socio-economic status – ID 3.6)										
I	10.0	13.0	13.8	9.7	8.2	10.2	8.8	10.7	9.6	6.1
R	10.3	12.2	14.2	11.2	8.9	10.0	7.9	9.0	10.1	6.4
Factor 3 (Students/mobility – ID 5.1)										
I	8.5	7.9	8.1	11.0	10.3	12.8	9.7	14.5	8.1	9.0
R	9.8	10.0	10.0	10.5	10.1	11.1	8.9	14.5	7.0	8.2
Factor 4 (Age – ID 4.3)										
I	8.4	7.7	9.8	11.8	9.0	13.6	10.2	10.4	10.2	8.9
R	7.7	9.1	10.9	9.7	8.3	13.2	11.1	10.9	9.6	9.5
Factor 5 (Socio-economic disadvantage – ID 5.6)										
I	4.8	8.1	11.3	12.9	11.0	10.9	9.9	12.0	9.1	10.0
R	6.0	9.5	8.8	13.0	12.1	12.5	9.3	11.4	9.2	8.1
Factor 6 (Rural – ID 4.3)										
I	7.6	10.8	10.0	8.3	11.1	9.5	10.7	10.0	9.0	12.9
R	8.7	12.0	9.9	8.3	10.0	10.2	11.7	10.4	7.8	11.0

I – interviewed; R – refused; ID – index of dissimilarity

Table 8. Distribution of those who were interviewed in the 2005 BES pre-campaign survey and those who refused, by deciles of the seven factors identified at the Census Ward Scale.

Decile	1	2	3	4	5	6	7	8	9	10
Factor 1 (Ethnicity – ID 4.7)										
I	10.6	11.0	10.8	10.4	11.1	9.4	9.8	9.9	9.5	7.5
R	11.4	9.2	10.4	10.4	8.7	11.4	10.8	9.8	9.7	8.1
Factor 2 (Socio-economic status – ID 4.5)										
I	10.0	9.2	9.8	9.9	11.0	10.4	10.2	9.8	11.2	8.6
R	10.3	10.2	10.9	9.0	10.1	11.2	9.8	9.0	9.7	9.9
Factor 3 (Age – ID 5.0)										
I	9.9	9.5	9.6	10.7	11.5	9.9	10.9	9.9	9.5	8.7
R	11.5	11.2	9.6	10.9	9.5	9.4	8.8	11.4	9.5	8.3
Factor 4 (Mobility/students – ID 3.8)										
I	10.2	10.8	9.3	10.0	9.6	9.5	9.6	9.9	11.2	9.9
R	9.9	9.8	10.1	9.5	10.3	10.5	9.8	9.8	9.3	11.2
Factor 5 (Socio-economic disadvantage – ID 5.5)										
I	8.2	9.2	9.8	10.3	10.4	9.9	10.3	10.1	10.7	11.2
R	10.4	9.4	10.9	10.5	9.2	10.6	8.1	11.7	10.6	8.4
Factor 6 (Rural – ID 2.7)										
I	8.9	10.1	9.6	10.5	9.6	10.3	9.6	10.1	10.4	10.8
R	10.9	9.9	9.8	10.5	10.3	10.3	9.5	9.8	9.5	9.6

I – interviewed; R – refused; ID – index of dissimilarity

Table 9. Distribution of those who were interviewed in the 2005 BES pre-campaign survey and those who refused, by deciles of the seven factors identified at the Electoral Ward scale.

Decile	1	2	3	4	5	6	7	8	9	10
Factor 1 (Ethnicity – ID 3.8)										
I	7.4	8.7	8.6	8.4	11.1	10.1	11.9	7.9	11.9	14.1
R	6.5	9.3	9.5	7.9	8.7	10.3	12.6	8.7	12.3	14.3
Factor 2 (Socio-economic status/disadvantage – ID 4.4)										
I	12.1	12.7	14.9	7.3	7.4	10.1	11.0	9.4	7.8	7.3
R	13.4	12.8	15.4	6.9	9.2	8.1	11.5	8.7	6.5	7.4
Factor 3 (Age – ID 6.7)										
I	9.7	11.3	7.4	12.1	11.0	8.4	13.8	12.2	7.9	6.2
R	8.4	13.6	8.1	13.2	10.3	7.9	15.5	9.0	6.7	7.3
Factor 4 (Mobility/students – ID 5.6)										
I	10.4	7.3	10.3	9.3	8.2	10.7	15.2	9.8	10.0	8.9
R	9.8	6.4	10.1	10.7	6.5	9.6	14.1	9.9	12.1	10.8
Factor 5 (Rural – ID 5.8)										
I	12.7	14.0	9.6	10.8	11.8	10.5	10.2	9.8	7.0	3.6
R	12.7	12.7	13.3	9.9	11.7	11.2	11.6	8.2	5.8	2.9
Factor 6 (Black/socio-economic disadvantage – ID 4.7)										
I	11.4	12.4	12.3	9.2	7.2	8.7	8.7	9.8	9.1	11.1
R	10.3	11.5	11.3	8.7	7.9	8.9	10.6	10.5	7.9	12.4

I – interviewed; R – refused; ID – index of dissimilarity

Table 10. Distribution of those who were interviewed in the 2005 BES pre-campaign survey and those who refused, by deciles of the seven factors identified at the Constituency scale.

<u>Decile</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Factor 1 (Ethnicity – ID 5.9)										
I	4.2	13.0	10.0	10.2	12.8	19.9	6.6	10.9	6.2	6.2
R	4.3	14.4	9.8	7.6	11.5	21.9	5.5	11.7	7.9	5.5
Factor 2 (Socio-economic status/disadvantage – ID 5.3)										
I	7.2	6.1	8.2	11.5	13.0	12.5	11.7	11.3	12.3	6.1
R	8.3	5.6	7.7	10.2	14.4	10.5	10.8	12.6	13.9	6.0
Factor 3 (Mobility/students – ID 3.6)										
I	6.6	9.2	13.5	11.9	12.3	6.4	13.1	9.9	6.3	10.8
R	7.7	9.7	13.4	10.8	12.5	6.3	14.8	7.6	6.5	10.8
Factor 4 (Age – ID 3.4)										
I	2.7	9.8	13.5	11.0	9.1	4.9	11.7	13.7	6.8	16.7
R	4.3	9.0	13.1	10.9	11.6	4.8	9.7	12.5	7.6	16.7
Factor 5 (Black/socio-economic disadvantage – ID 3.9)										
I	5.3	6.4	16.6	10.1	10.8	7.9	10.5	9.3	10.6	12.7
R	5.9	5.1	15.8	11.2	12.2	8.4	10.4	9.1	10.2	11.6
Factor 6 (Rural – ID 6.1)										
I	7.2	7.9	7.8	10.5	12.8	9.1	6.9	10.9	14.9	12.1
R	8.4	7.3	9.2	11.2	14.0	7.0	8.3	9.5	14.7	10.3

I – interviewed; R – refused; ID – index of dissimilarity

Table 11. Distribution of responses to the 2005 BES pre-campaign survey by settlement size.

	Interview	NoContact	Refused	Other	OutScope
Rural	5.8	2.1	4.5	5.8	6.2
100 - 999	2.8	1.0	2.8	1.9	1.9
1000 - 2499	6.1	4.5	5.5	7.3	7.8
2500 - 4999	6.1	6.3	4.8	4.4	4.3
5000 - 9999	7.7	3.5	7.6	5.8	6.5
10,000 - 24,999	17.9	14.3	16.7	17.5	11.8
25,000 - 49,999	12.7	7.7	13.8	7.8	9.1
50,000 - 99,999	8.7	7.3	10.3	8.3	8.1
10,0000 - 249,999	14.5	21.3	15.6	18.9	18.3
249,999 - 999,999	7.8	8.4	7.9	8.7	7.8
1000000<	9.9	23.7	10.5	13.6	18.3
N	2656	287	1363	206	372

Table 12. Binary logistic stepwise regression models of responses to the 2005 BES pre-campaign survey

	I	R	NC	O	OS
LLSOA Factors					
1. Ethnicity	-	-	-	-	0.41***
4. Mobility	0.15***	-	-0.40***	-	-0.38***
6. SE disadvantage	-	-	0.28***	-	-
7. Rural	0.06*	-0.09**	-	-	-
MLSOA Factors					
1. Ethnicity	-	-0.15**	-	-	-
3. Students/mobility	0.06*	-0.09**	-	-	-
4. Age	-0.09**	-	-	-	0.29***
Census Ward Factors					
1. Ethnicity	-0.13***	-	0.15**	0.27***	-
2. SE status	-	-	-	-0.17*	-
5. SE disadvantage	-	-	0.18*	-	-
6. Rural	-	-	-0.29***	-	0.18***
Constituency Factors					
2. SE status.disadv.	-	-	-	-	0.13*
5. Black/SE disadv.	0.08*	-	-	-	-
Winner of seat, 2001 (comparator – Conservative)					
Labour	-	-	-	-	-
Liberal Democrat	-	-	-	-	-
Plaid Cymru	-	-	1.40***	-	-
% correctly classified	56.3	72.1	94.1	95.8	92.4
% category correct	86.0	0.0	0.0	0.0	0.0
Nagelkerke R ²	0.022	0.008	0.058	0.019	0.066

I – interviewed; R – refused; NC – no contact; O – other response; OS – out-of-scope