

# **"Review of Ballot Paper Design" consultation - Response of the Centre for Computing and Social Responsibility, De Montfort University**

**Dr. N Ben Fairweather**  
Research Fellow

This is a response to the 2003 UK Electoral Commission consultation entitled "Review of ballot paper design" ([http://www.electoralcommission.gov.uk/files/dms/FinalBallotpaperreviewforweb\\_7744-6810\\_\\_E\\_\\_N\\_\\_S\\_\\_W\\_\\_.pdf](http://www.electoralcommission.gov.uk/files/dms/FinalBallotpaperreviewforweb_7744-6810__E__N__S__W__.pdf))

## **Consultation Issue**

We responded to the 2002 review of the Political Parties, Elections and Referendums Act 2000, suggesting that any amendment to PPERA takes account of the possible implementation of electronic voting. As a member of the research team commissioned by, inter alia, the Electoral Commission to research the Implementation of Electronic Voting, we are pleased that there are explicit questions about relevant issues in this consultation.

In general, we urge caution in the introduction of changes: the view of a member of the focus groups in the Implementation of Electronic Voting project is appropriate: "Why look for trouble? Why fix it if it isn't broken." (as quoted in BMRB, 2002, p22)

It is worth noting that electronic voting using VDU displays, properly implemented, offers substantial advantages in ballot design over paper, since multiple views of the ballot are available. Some of the ways this can be used are indicated below.

**Section 1.7.** We wholeheartedly welcome the aim to make ballot papers more user-friendly.

Our view of the electoral process is that the aim should be accurate transmission and aggregation of the wishes of the voters.

In our recent paper on these issues (Fairweather and Rogerson, 2003) we argue that in electronic voting, security should generally take precedence over other issues of interface design. This is because most of the danger of inaccurate transmission and aggregation of the wishes of the voters in electronic voting comes from security issues. Even so, we argue that security must not be achieved at the expense of confusing voters<sup>1</sup>. Where paper ballots are used, issues of security are less relevant to ballot paper design, and even in electronic voting, the questions of interface design are substantial. We hold firmly our view that if security is not at issue, the accurate transmission of the wishes of voters requires making ballot papers as user-friendly as possible without introducing other distortions.

We are aware that poor design of paper ballots could have severe impacts on confidence in the electoral system. One of the key issues that means that the legitimacy of the US presidential election is still disputed was a design of ballot papers in parts of Florida that was at best confusing in use (see Resnick, 2000).

## **2.1 Q1(a)**

The effects of alphabetical listing of candidates are mitigated under present arrangements by each of the political parties having candidates with a wide variety of names. Thus, if one party does gain an advantage in one division by having a candidate with a surname early in the alphabet, they will lose out in another division by having a candidate with a surname late in the alphabet. While this may be unfair to particular candidates, the overall effect on the polity is minimised.

There can be no doubt that there is a problem with the ordering of names of candidates in situations where electronic voting uses ballot displays where (at least for a proportion of voters) not all candidates are displayed simultaneously. A typical situation would be analogous to the use of a web browser (such as Internet Explorer), where the designer of the web page does not know how much of the web page will be visible on the user's

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1. In principle security could be aided by omitting any reference to the political party, either visual or verbal, since these are the parts of the interface most likely to be exploited by virus attacks, but voters would find this excessively difficult.

computer: if too much is put on the web-page, the user needs to 'scroll' to view some of the page. While a higher proportion of web users can now cope with scrolling than previously, scrolling still reduces usability (Nielsen, 1997). Since voting should be universally available on equal terms, the fact that a proportion of the electorate cannot cope with scrolling (SCOPE, 2002, p44) is an incomparably more severe problem for electronic voting than it is for commercial websites (where the loss of the business of a proportion of potential users can be offset by gains of additional business amongst other, more technically savvy and probably wealthier, users).

If alphabetical ordering is used with electronic voting in situations where scrolling might occur, a proportion of the electorate will never realise that candidates later in the alphabet are standing, and those candidates will be disadvantaged in a vastly more substantial way than with paper ballots.

Similarly in situations, such as telephone voting, where voters are presented with a time-sequential list of candidates, there is a danger that those last in the list will be disadvantaged, since a proportion of voters will already have made their selection before being presented with that option.

Given that different ethnic groups have a different alphabetical distribution of surnames, there is a danger that if position on the ballot paper has an impact on election results, ethnic biases will become problematic or will be perceived as being problematic.

## **Q1(b)**

*The evidence of Rallings et al (1998 pp123-5) is clear that alphabetical listing does give an advantage to candidates with surnames nearer the beginning of the alphabet. While their original research related to multi-member wards, there is no reason to believe that the effect will be absent in single vacancy divisions (although it would be much harder to research, controlling for party effects). They reference numerous other academic papers that provide other, independent evidence.*

It is also clear from the evidence that with poorly designed ballot papers position on the ballot paper can influence voter behaviour (Resnick, 2000).

While we are not aware of any research into the effect of position on the ballot on electronic voting, consideration of interface design for those who are less computer-literate suggests that the effect will be *even stronger* than any effect with paper ballots. We consider this to be an area in need of further urgent research prior to any widespread implementation of electronic voting.

## **2.2 Q2(a)**

If there is reason to change from alphabetical ordering by candidate surname, changing to alphabetical ordering by party name would make things worse. Alphabetical ordering by party name would be unfair both to individual candidates of disadvantaged parties and also to those parties as a whole; and the effect on the polity of such unfairness would be maximised.

We do not have a clear view between the other options for paper ballots beyond our opposition to ordering by party name.

## **Q2(b)**

Rotating the order of names in most types of electronic voting is a trivial issue compared with the technical challenges of ensuring adequate security for electronic voting. Methods such as use of software where the source code was open to inspection, which is already a necessary element of bringing adequate checks and balances into the electronic voting process, would provide the necessary processes to ensure each rotation's ordering were presented to voters an equal number of times. There would not be the additional problems with counting that rotation would present with paper ballots.

## **Q4(a)**

We are aware of parties choosing to publicise the number(s) of their candidate(s). We note that if voting behaviour is influenced by the use of numbers on the left hand side of the ballot paper, it is most likely that there is an advantage to having a low number associated with your candidate (see answer to Q4(b)). If this is the case, under UK electoral arrangements, any differential impact of candidate numbering would be indistinguishable from the impact of alphabetical ordering outlined above.

## **Q4(b)**

We suspect that numbers on the left hand side of ballot papers are confusing to a proportion of voters now that we are in an era where voters are on occasion presented

with numbered party lists of candidates, and mayoral elections with first and second preference votes. We are also aware that a significant number of voters may also have encountered preferential voting in other elections (such as trades- and student- union elections). These contexts all provide for the candidate associated with the number 'one' to be the most favoured. Since many of *these* uses of numbering of candidates are relatively recent changes, the effects of this could be expected to increase with time, as more voters encounter them, and as voters encounter them more times.

The numbering of candidates on the ballot paper appears to us to be a legacy from an era when party emblems (or even names) were not present on ballot papers and when a significant proportion of the electorate were insufficiently literate to read candidate names. Given that ballot papers now display party names and, importantly, emblems, it appears to us that there is little case for the retention of numbers on the left hand side of ballot papers if the combination with other uses of numbers could lead to confusion or bias in the electoral system.

## 2.5 Q5(a)

One of the findings of the focus groups conducted as part of the Implementation of Electronic Voting project was that in the mock-up of electronic voting, "The use of party colours and logos was appreciated as it was felt these made it easier to see who you were voting for" (BMRB, 2002, p28).

We are clear that the presence of emblems on ballot papers is important in improving access, and in the case of electronic voting improving interface usability. Analyses have demonstrated that the vast majority of voters decide which *party* to vote for, rather than decide between individual candidates, and that personal votes represent less than 10% of those cast (eg Butler & Kavanagh, 1992, p340; Rallings et al 1998, p121).

While it might be desirable for more voters to vote for individuals rather than parties, fairness to voters with limited literacy or restricted intellectual abilities requires that the electoral process ought to recognise the reality of the situation as it is, giving the designators of party *greater* prominence than those of individual candidates. Thus the default view of the ballot for electronic voting should have party emblems as the *dominant* part of the display, and clicking on the emblem should be sufficient to select that party or candidate. Making party emblems similarly prominent on paper ballots appears to us to be similarly appropriate.

Against this background, we consider it likely that being denied use of an emblem will disadvantage a candidate. However, since the vast majority of voters already vote for parties with emblems *and find those emblems useful*, we would be strongly opposed to

the idea that "If one of the candidates in any particular election does not have an emblem then those who do should not be allowed to use theirs as it gives them an unfair advantage." There should be other methods used to avoid any effect of unfair discrimination against candidates who are not officially authorised candidates of parties with emblems registered with the commission.

## **Q5(b)**

For reasons outlined later in this response, we are opposed to the use of photographs on ballot papers, and as already outlined we oppose the idea of 'all or none' using emblems.

We favour allowing candidates who would not otherwise have a registered emblem being allowed to register emblems. We recognise that it may prove impossible for this to be achieved within the timetable for an election. However, few elections come as a surprise, since most elections take place on a fixed timetable, and parliamentary General Elections can usually be predicted to take place four to five years after the preceding election, unless a hung parliament results (in which case a quickly-following second election can, equally, be predicted). Similarly, by-elections are usually predictable from the day a vacancy arises. Thus we consider that it should be possible for emblems to be registered before notice of the election is published. A rule could be established that candidates can use any emblem registered at least three months prior to the polling day if they have permission (which could be delegated) of the person registering the emblem. Given that candidates with wildly contradictory aims in different (but perhaps neighbouring) local authorities could seek to register the same emblem if local returning officers were able to register emblems, it appears to us that only the Electoral Commission is in a position to register emblems.

We have no doubt that provided suitable emblems are selected, colour emblems would make ballot-papers more user-friendly. It may be that costs are too great to justify the use of colour emblems for local election paper ballots in the immediate future, however in elections of greater importance and where print runs of ballot papers are longer, the balance is more likely to come down already in favour of the use of colour emblems.

Many types of electronic voting enable the display of colour. We are utterly convinced that colour emblems should be used in these contexts, since the benefits are significant and the costs minimal.

It thus seems appropriate that colour emblems are registered for each party, so as to provide a definitive reference source for those implementing electronic voting, and to enable the Commission to ensure that colour emblems do not give rise to confusion between parties.

## Q5(c)

To reduce the frequency of candidates without an emblem and reduce the administrative burden on candidates and agents, we would suggest that it should be possible for a candidate to use the emblems of a party without signed authority from the party, *provided* that party has no other candidate in that division.

## Sound

Good computer interface design for those who are less familiar with computers or who have other difficulties operating computers requires the use of appropriate sounds where possible, and where there are not other factors militating against the use of sound. Similarly, in some electronic voting contexts (notably telephone voting and interfaces for use by people with severely impaired vision), sound output is vital.

These factors suggest that it is appropriate for parties to register sound 'emblems' for use when appropriate in electronic voting.

It should be noted, however, that in cases of electronic voting using family Digital Television sets or computers in family rooms or in the workplace where they can be overheard, sound output should *not* include any sound (neither a sound 'emblem', nor party name, nor candidate name in audible form) that indicates the vote selection of the voter in a way that could be overheard violating privacy. Thus the use of sound 'emblems' can be expected to remain limited, although it could be important in contexts where it is appropriate.

As well as telephone voting, the use of sound 'emblems' is appropriate in other types of electronic voting in conjunction with headphones and should be generally available as an option to assist those with visual impairments to vote independently. Preferences, such as for full audio output<sup>2</sup>, would ideally be collected at the voter registration stage under any full implementation of electronic voting.

**2.6.** We concur with the attitude of the Commission that candidates should not be obliged to use their full legal names as their main name on ballot papers. In our opinion, good usability design requires that the name the candidate is most commonly known by should be the most prominent identifier of the individual candidate.

We favour voters having ready access to other information by which they can identify the candidate, namely their full legal name, their address and any names they have formerly been known by or are known by for other purposes, but do not see a need for this to be

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2. Linguistic preferences, as outlined below, might also usefully be collected.

presented on the ballot paper itself, or on any main vote selection screen with electronic voting. In the polling station, we would favour full legal names and addresses of candidates being on display in the polling booth. For postal voting, we would favour this information being printed on the materials that accompany the ballot paper, and for electronic voting we would favour it being accessible as an option from the vote selection screen (the equivalent of the main ballot paper)<sup>3</sup>.

**3.1.** We are clear that good interface design for electronic voting requires that the amount of verbiage on the default vote selection screen be minimised, and that party emblems be given the greatest prominence practical. We suspect that the same principle should apply to printed ballot papers. In neither case, however, does this preclude the provision of information to the voters in other places or in other ways.

## Q7(a)

If there are simultaneous elections to different bodies taking place, it appears to us that it is preferable for the front of printed ballots to show the election to which they apply. In other circumstances we would favour this information being present in the polling booth, but not on the ballot paper.

With electronic voting, we would favour the information about what the election is being available on a display screen (or audio introduction) prior to the presentation of the vote selection screen (or audio menu). For simultaneous elections, this information should be presented immediately before the vote selection screen (or audio menu) for each election.

## Q7(b)

With electronic voting we would favour the use of *both* audio and textual reminders of the right to vote in secret prior to the presentation of the vote selection screen (or audio menu) whenever there is the possibility.

We are deeply concerned by proposals to allow electronic (and, equally, widespread postal) voting in contexts where secrecy cannot be assured by polling station staff.

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3. We would favour the link to this further information being a minor, unobtrusive option of a sort that could not be accessed by accident. We would also favour it being possible to vote from this 'further information' screen (or listing, in the case of telephone voting) without needing to return to the original presentation of the ballot.

We consider it vital that postal voting ballot papers include wording such as “You have the right to vote in secret” printed horizontally at the top of the paper in such a way as to make those words the most prominent on the ballot paper.

Within the polling station, there are other ways of promoting a culture of secret voting, however, even in these circumstances we consider that it is advantageous for voters to be given reminders of the right to vote in secret either by notices, by words on the ballot paper or by being told by polling officials.

## **Q7(c)**

It appears advantageous to us for information about the elected body to be available to voters in the voting context. However, we do not believe the information that could be presented on a ballot paper, as illustrated by the sample ballot papers, is sufficient to be useful, beyond identifying to which election the ballot paper applies.

For electronic voting, we would anticipate that by default voters should be given an option of finding out more about the elected body and the role of elected representatives within it. We would anticipate this information being accessed in the same sorts of ways as information about full legal names and addresses of candidates, as explained above.

In a polling station, having a leaflet about the elected body (and the role of elected representatives within it) available for inspection, and a notice to that effect, is probably sufficient.

## **3.5 Q8(a)**

It is useful for voters to have information on how to vote available throughout the process of marking their vote.

For electronic voting using Digital TV or computers away from polling stations information on how to vote can, and should, be presented *both* by information on the vote selection screen and an audible message that is heard as the screen is displayed.

For postal voting, it may be that information on how to vote is best presented on the ballot paper, to ensure that the voter is able to find and see it as they vote.

## **Q8(b)**

For paper or electronic voting in the polling station, we consider that making information available on how to vote throughout the process of marking the vote is probably best achieved by notices in the polling booth. Both ballot papers and electronic vote selection screens should ideally be as uncluttered as possible, and it appears to us that notices in the polling booth can present this information more effectively.

## **3.6 Q8(c)**

We do not consider there is any advantage in making information on how votes are counted available on ballot papers, except for preferential voting when voters are away from the polling station (eg Mayoral elections with postal voting or off-site electronic voting).

However, information on how votes are counted should be available to voters either within the polling station or as a selectable option within the electronic voting process.

With preferential voting as used in Mayoral elections, we consider that it is important that voters know that choosing a second preference cannot harm the chances of their first preference, and that if there is no result on the first round, a run-off will be conducted between the two candidates getting the most votes in the first round, in which the second preferences of people who voted for other candidates will be taken into account. Away from polling stations, this information might be best conveyed on the ballot paper, or with electronic voting either by audible or visible message available during the vote selection process.

## **3.7 Q9(a)**

It appears to us that making available information relating to the candidates and their parties would be an enhancement of the democratic process, increasing the chance that voters will make an informed decision.

For electronic voting, it is technically feasible for very large amounts of further information to be available through selection of particular on-screen options. There is a strong argument for this to be done in ways that ensure that voters do not lose track of where they were in the voting procedure (California Task Force, 2000, 10v). This could

be achieved by use of a split screen, where the left hand side remains a vote selection screen, while the right hand side presents the further information.

## **Q9(b)**

With electronic voting, it is technically easy for access to be allowed to party websites to provide such additional information: however, to do so would almost certainly violate the necessary security of the voting process. According to Mercuri (2001, p34) “interfacing to the Internet could be, in itself, considered to constitute a security breach, in that wide attack and monitoring opportunities are provided that would not be possible with individual DRE [voting machine] kiosks, or in a closed network setting”. Thus it is better for electronic voting to provide access to a limited amount of approved information, in the same way as is suggested for traditional polling station voting.

For elections where free Royal Mail delivery is available, making available the same information that virtually the whole electorate has had the opportunity to see already serves little purpose. The improvement in the quality of deliberative judgement that would be possible by making more extensive information available to voters appears to us to justify the costs associated. It appears to us that, given that only a small minority of candidates are independents, requiring each Returning Officer to check all such materials would be either be excessively and unnecessarily demanding on Returning Officers, or require inappropriate restrictions on the amount, or type, of material available to voters. We consider that it is appropriate that a national manifesto of up to 20 pages A4 would be available for each Party, as well as a short individual statement from each candidate, which could outline any points on which they take a position that differs from the national manifesto.

## **Q9(c)**

What we would suggest is that for every Party registered by the Commission, a national manifesto is checked by the Commission (perhaps once every twelve months) of up to 20 pages A4 paper that is made available in polling stations or as part of any electronic voting application. In addition, we would suggest that individual candidates be allowed to present a personal statement of up to one page A4 paper, which would be checked by the Returning Officer, along with any manifestos of independents (of up to 21 pages per candidate, except that joint independent candidates would share one 20 page manifesto and would each be entitled to a single page personal statement in addition).

### **3.9 Q10(a)**

In our report on technical issues in the implementation of electronic voting (Fairweather and Rogerson, 2002, p19) we call for 'multilingual support for a sufficient range of languages', since privacy violations may arise from failure to allow voting in voters' own languages. We continue in the belief that this is appropriate.

The relationship of those with visual impairments to ballot papers is different from that of those with linguistic constraints. Given the inability of those with profound visual impairments to learn to read printed English, no matter how hard they try, or to see party symbols, it is appropriate that if a request is made a suitable period in advance of polling day, a Braille ballot paper is always made available.

We would anticipate that making the party emblems the dominant feature of ballot papers (see answer to Q5a, above) would reduce the need for ballot papers in languages other than English and Welsh, however it is our belief that local authorities should be entitled to produce ballot papers in any language they consider it appropriate to use, in addition to always producing papers in English, Welsh and Braille if needed.

Other materials such as explanatory notes should be available in the full range of languages for which ballot papers are produced. It may not be appropriate for such materials to be on display (as they will make it harder for the majority of voters to see the information that they can read), but if a ballot paper is requested in a particular language, the presence of those materials in the same language should be brought to the attention of the voter.

### **Q10(b)**

It is appropriate for there to be a threshold, as a percentage of the electorate. It is also appropriate that in elections to larger divisions (as occurs with Parliamentary, Mayoral, Assembly and European elections, for example), if there are more than an absolute number of voters of a linguistic group within the division, ballot papers should be produced in the language of that linguistic group.

While we do not have expertise in assessing the costs, thresholds of 10% of the electorate or 1,000 people (whichever is lower) appear to us to be broadly appropriate for the mandatory production of paper ballots in minority languages.

For electronic voting, the same cost considerations do not apply, however given that complexity of the interface is deprecated<sup>4</sup>, the number of languages available as on-screen options<sup>5</sup> may need to be restricted.

## **Q10(c)**

For electronic voting using VDUs, we would anticipate that language selection would be accomplished in three ways.

1. For voters who have indicated a language preference at registration, as soon as they initially identify themselves to the system (even before entry of any further short PIN or other security code), the system would re-set its language to the language they have registered as their preference (but with an option to change language as outlined in 2).
2. All voters will be presented with an on-screen 'change language' option on each of the screens a normal voter would see prior to the 'ballot paper' screen (and changing language would be an option that could be obtained from a multi-purpose 'options' selection on that screen).
3. For voters who have not already indicated a language preference (at registration, or earlier in the voting interaction), or a preference for a simplified interface (for example due to disability), following the identification and authentication screens, there would be a language selection screen, from which any of the languages of more than 5%<sup>6</sup> of the electorate can be immediately selected (if that language is supported). It may be possible for further languages to be selected via an 'other languages' option.

We do not have sufficient knowledge of relevant languages to comment on the particular issues of design within each screen, or of paper ballots, in languages other than for English and Welsh languages.

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4. Since great complexity may make it unusable for voters with low levels of computer literacy, and since complexity makes security assurance disproportionately more difficult.

5. It may be possible to allow other languages to be seen by voters as their default language if they indicate a language preference at registration stage.

6. 5% would restrict the number of languages available for selection on the one screen to manageable numbers

### **3.11 Q11(a)**

Since there are far more voters for whom ballot papers are currently too small than for whom they are currently too large, it seems appropriate to increase the size of ballot papers. Such an increase may aid those with visual or motor-control impairments more than many implementations of electronic voting.

### **Q11(b/c)**

Our understanding is that white paper can be particularly difficult for people with dyslexia, and that a pale lavender shade can be particularly helpful. Particular care needs to be taken so that if the whole ballot paper is printed on coloured paper (or if coloured banding is used, and a background colour is used for the other parts of the paper), the choice of colour does not favour any of the parties. The fourth sample ballot paper might be seen as favouring the Liberal Democrats, or the sixth as favouring Labour, for example. Similarly, there will need to be care in the choice of colour for use in electronic voting interfaces (all screens apart from the vote selection screen(s) will probably need some use of colour, which should be party-neutral).

To achieve this, we would suggest that the Electoral Commission reserve a number of colours and shades for use without any appearance of party bias. As a step towards this, it might be appropriate for parties that were registered under the Registration of Political Parties Act 1998 to be given a chance to select a colour before the Electoral Commission reserves colours.

Preece et al (1993, p76) suggest that "colour should be used ... as ... an additional form of coding".

As mentioned above (at Q5(a)) a conclusion of the focus group research for the Implementation of Electronic Voting project was that "The use of party colours and logos was appreciated as it was felt these made it easier to see who you were voting for" (BMRB, 2002, p28).

These considerations would seem to apply as much to paper voting as electronic (although cost considerations may restrict the use of colour to elections with larger electorates in the division).

The use of colour should not be restricted to emblems. It is appropriate that for each candidate (etc) the party colour is used as the background to the text of their name and any other details displayed on the ballot paper or any primary vote selection screen in electronic voting.

Care must be taken where party colours include a dark colour that text has sufficient contrast. This might be achieved by allowing parties to nominate a second colour for text, but if this is done, colour combinations should be chosen which do not cause problems for people with colour-blindness, to prevent the introduction of disability discrimination.

Further analysis of data from the electronic voting focus groups indicates that where appropriate a change in background colour should indicate which options are selected (a feature of one version of the mock-up tested by our focus groups which was appreciated), or perhaps when a mouse (etc) is over that section of the screen. It may be appropriate for parties to be permitted to select another shade of their chosen colour to be used in such circumstances, although the choice of a second shade should not preclude another party from having that same shade, or something very similar, as its main colour, provided there is sufficient contrast between the main colours of the two parties concerned.

### **3.14 Q12(a)**

While it is possible that the inclusion of photographs will make the ballot paper or electronic voting interface more user-friendly, there is a significant possibility that photographs will introduce distortions into the electoral process that will interfere with the accurate transmission of the wishes of voters - for example it may cause voters to be inhibited from voting for a candidate with a facial disfigurement or prominent marking (such as a birth mark), and colour balance issues may mean that there is a mismatch between the apparent and actual ethnic origin of the candidate (this could be especially problematic with printed paper ballots, since colour balance issues may be in the control of printers in these circumstances).

### **Q12(d)**

We suspect that the use of photographs will increase the likelihood of discrimination against (apparently) non-white candidates, and candidates with facial disfigurements and prominent marking. It may also lead to a financial bias, as wealthier candidates are more able to have plastic surgery, and skin lightening.

We are also aware that some Muslims find pictures of human faces sacrilegious. We wonder if they will be deterred from voting by the presence of photographs on ballots.

## **4.1 Q14**

As outlined above (at 2.6), we favour the removal of all information from the ballot paper other than the common name of the candidate, the name of their party, any party emblem, and a background colour for that party.

In the polling station, we would favour full legal names and addresses of candidates being on display in the polling booth. For postal voting, we would favour this information being printed on the materials that accompany the ballot paper, and for electronic voting we would favour it being accessible as an option from the vote selection screen.

## **4.3 Q15(a)**

The legal process for tracing ballot papers is used rarely, and our understanding is that most of the informal allegations of systematic electoral malpractice are of sorts where tracing ballot papers after the poll would be of no practical use. In our opinion, thus, the violation of the principle of a secret ballot that is inherent in the use of serial numbers on ballot papers is unjustified.

## **Q15(b)**

Rather than increasing the difficulty of tracing ballot papers, in our opinion it is far more likely that barcodes make it easier to trace ballot papers, since they facilitate automated sorting of ballot papers. The practical difficulty of the sorting process is both the main difficulty involved in tracing ballot papers, and the greatest protection of the secrecy of the ballot with our current arrangements. In our opinion, any change, such as the use of barcodes<sup>7</sup>, that facilitated automated sorting of ballots would upset the delicate balance in current arrangements.

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7. Or electronic voting without adequate secrecy protections: see Fairweather and Rogerson, 2002, pp12-13

## **Q15(c)**

If the use of serial numbers were to continue, or be replaced by alternative methods for tracing ballots, honesty requires that the electorate are educated that the ballot is not truly a secret ballot, and it is reasonable for the claimed justification to be part of this process.

## **4.8 Q18**

To eliminate unfairness as a result of accidents (or even bias) on the part of the Returning Officer, we consider it appropriate for candidates or agents to be given the opportunity to proof a copy of the ballot paper prior to printing. We similarly have called (Fairweather and Rogerson, 2003) for the process of generating 'ballot papers' for electronic voting to be open to inspection.

## **4.9 Q19(a)**

Given that marking ballot papers with pencil has been justifiably called "astonishingly quaint" by Robin Cook (as quoted in Ashley, 2002), it seems appropriate that a change is made. We strongly suspect that other means of marking ballot papers, such as ballpoint pens, would be suitable and cheaper.

We are also particularly concerned that forms of electronic voting are being trialled that mean that electronic ballots are marked by the equivalent of an ordinary pencil, and then passed through the hands of multiple, unknown people, before reaching the 'ballot box', with no way of detecting if they have been changed en route.

## **4.15 Q21(a)**

Our attitude is that generally the design of ballot papers for use in e-voting and traditional situations should be driven largely by the same considerations. The considerations that make for good design of electronic voting screens can, and should, also be applied to ballot paper design.

## **Q21(b)**

We have written an academic article largely about the appropriate design of 'candidate selection' screens (Fairweather and Rogerson 2003), drawing further on the focus group research conducted as part of the Implementation of Electronic Voting project that was part funded by the Commission. The article is being considered for publication by a leading academic journal. We are willing to make it available to the Commission on a confidential basis at this stage, prior to its publication. Some of the conclusions are mentioned elsewhere in this response as appropriate, but they are summarised below:

### **Key considerations are**

- That pen and paper voting should always be available as an accessible and viable option to those voters who prefer it, since a significant proportion will not be able to master voting electronically.
- As a general principle, and within limits, our view is that security issues should take priority over other issues of interface design: thus while it may be sometimes be desirable for display settings for font sizes and colour contrast (for example) to be taken from existing settings on the client machine, this must not be allowed to compromise security.
- Security must not be achieved at the expense of confusing voters.
- All the computer programs involved in the generation of electronic 'ballot papers' and elsewhere in the voting process should be open to inspection (open source code).
- The system should be user-customisable for font sizes and colour choices. Ideally these should be set through the voter registration process (SCOPE, 2002, p38), and automatically communicated to the interface at the stage of identification and authentication of the voter.
- Non-confidential parts of the process should, by default, be presented in audible form.
- Interfaces need to be designed with the aim of universal access being a key design principle. The approach of many business applications of designing for the 'normal' user and then adapting to include access for those disabled people who can easily be accommodated is inappropriate and immoral when applied to electronic voting.
- Designs need to enable unassisted use even by voters who are not at all familiar with ICT.
- Interfaces generally need to be designed to work with a variety of input and output devices, including screen enlargers and screen readers; the availability of audible

output; and keyboard and mice as alternatives to each other. Audio output of confidential parts of the voting process should be available as an option.

- The initial display of the ballot paper should show party emblems as the dominant part of the display, and clicking on an emblem should be sufficient to select that party or candidate. Voters should not necessarily be required to click on a button marked 'enter', or press return to select the candidate.
- Colour should be used extensively, including coloured backgrounds to indicate party (paralleling sample ballot paper number 7), and colour emblems.
- Information other than common name of the candidate, party name and colour and party emblem should not appear on the initial display of the ballot paper. Other information may be accessible as an option, and it should be possible to vote while viewing this other information.
- Efforts must be made to minimise the chances of scrolling being needed to see the full list of candidates. Since with some delivery mechanisms there cannot be a guarantee that no voters will be faced with scrolling, the ordering of candidates on screens should be random.
- 'Ballot papers' such as those proposed by the electronic voting security study (CESG, 2002, p50) are in our view unsuitable for mainstream use (see Fairweather, 2002, response to Annex C) since they are too difficult for most voters to use and could enable vote buying or coercion.

## **5.1**

The consultation document states that "ultimately, one of the candidates must be elected". This does not appear to be the case to us. If 'none-of-the-above' were to be the choice of the electorate, it may be that if another election were held, political parties would offer *other* candidates for election that would be acceptable to the electorate. The most likely situation would be where an election was held in a division where traditionally one of the parties has enjoyed an overwhelming majority, but their candidate, being offered for re-election, has been disgraced in a way that means the electorate do not wish to support that candidate. If 'none-of-the-above' were elected, an alternative candidate of that party could be offered who would command majority support of the electorate, which would be the outcome that would most closely reflect the wishes of the electorate.

## **5.3**

It seems unlikely to us that a significant number of voters would 'flippantly' make the effort to go to a polling station. Certainly, without compulsory voting, only a small proportion of those who wish to abstain could normally be expected to attend a polling station to vote for 'none of the above'.

### **Q22(a)**

In principle we support the introduction of a system of positive abstention. Voters that attend the polling station and vote for 'none of the above' are likely to, in general, have a greater sense of civic duty than those who do not: their voting for 'none of the above' appears to us often to be a serious message of a sort that the electoral system should be able to convey. Additionally, with the UK political system, there is currently no other way for voters to effectively say 'I am deeply dissatisfied with the candidate offered by the party of my choice' without assisting the election of an opponent, who may reflect the views of the voter even less well.

### **Q22(b)**

If 'positive abstention' were to be introduced, we would favour the election being re-run, but the candidates from the first election being disqualified from standing in the re-run election.

## **5.9 Q23(a)**

We would favour the names of individual candidates in closed list elections being available to all voters, but not present on the ballot paper (or default vote selection screen) itself. The display of the list of names in the polling booth, on an accompanying sheet of paper, or on an optional vote selection screen for electronic voting should be sufficient.

## Q24(b)

The evidence already mentioned (Butler & Kavanagh, 1992, p340; Rallings et al 1998, p121) suggests that only a small proportion of voters will be influenced by the inclusion of names as well as party identifiers on ballot papers.

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