# Factors Affecting Political Poll Accuracy: An Analysis of Undecided Respondents

Janet Hoek and Philip Gendall

Recently, pollsters have experienced discrepancies between their poll predictions and subsequent election outcomes. One possible explanation of these divergencies is the growing proportion of undecided respondents in poll samples. This paper discusses three methods of reducing the proportion of undecided respondents: the use of contextual questions; a secret ballot device; and the use of a relative, rather than absolute, behavioural question. It concludes that, although it is possible to completely eliminate this group from poll samples, reductions in the proportion of undecided respondents are not necessarily matched by an increase in the accuracy of the poll estimates. Indeed, this study found that the sub-sample with the highest proportion of undecided respondents also produced the most accurate estimates. The paper concludes that direct intention questions, together with reduced contextual questions, and allocation of undecided respondents in proportion to party support levels, seem likely to produce the most accurate poll estimates.

Keywords: poll predictions, voting intentions, Juster Scale, political opinion polling

## Introduction

The prediction of voting behaviour interests many political and social scientists and preoccupies major political parties. However, despite several decades of research, attempts to forecast election outcomes have met with variable success and pollsters, together with users of their results, have often been frustrated by differences between their estimates and the subsequent election outcomes (see Perry 1979; Crespi 1988).

In principle, political opinion polling appears a straightforward task, requiring only the administration of one or two questions to a group of voting age people. However, in practice, there are a number of problems. Perry (1979) enumerated the full range of these:

"All one has to do is use a properly drawn sample of the electorate large enough to minimise random sampling error, get honest answers from everyone, do the questioning close enough to the time of voting to minimise changes in voting intentions, anticipate how the undecided will vote, and, finally, distinguish between voters and non-voters in the electorate" (p. 312).

The factors that may bias poll estimates include the sampling frames and the procedures used to select individuals from these, the questions asked and the response mechanisms employed; the interviewers' characteristics; the timing of polls; the identification of likely voters, and the treatment of undecided respondents (see also Traugott 1987; Collins 1988; Crespi 1988; Jowell, Hedges, Lynn, Farrant & Heath 1993 for a discussion of these factors). Though all of these issues are potentially important, the problems posed by undecided respondents appear to be gaining in magnitude. The proportion of undecided respondents in polls prior to recent New Zealand General Elections has increased, a trend noted also by researchers analysing elections in the United Kingdom and other European Community countries (see Crespi 1988; Jowell *et al.* 1993).

Overall, the majority of researchers investigating pre-election poll error have acknowledged the difficulties posed by undecided respondents. Daves & Warden (1993) sum up the problem:

"The public and pollsters judge a poll by how closely it reflects the outcome of the election. Polls with high numbers of 'undecided' or 'no opinion' responses cannot accurately reflect election day results" (p. 2).

While it is accepted that undecided respondents may contribute to poll errors, the factors related to indecision are less clear, as are strategies which might ameliorate these. To date, at least three possible explanations have emerged.

First, some researchers have suggested that indecision may be a consequence of the question context, or lack thereof. Political opinion questions are often included in omnibus surveys which explore a wide range of topics in limited detail. Bradburn & Sudman (1988) have suggested that questionnaires which do not precede behavioural questions with a series of more general questions may inhibit respondents' evaluation of all the factors that eventually shape their decision. One consequence of this may be that respondents declare themselves undecided.

Second, researchers have noted that the direct form of questioning typically used in polls fails to recognise the sensitivity of the information being sought. In other words, some respondents may feel that their political preferences are personal, thus making them reluctant to divulge these views to comparative strangers (Bradburn, Sudman, Blair & Stocking 1978). Although some of these people no doubt refuse to participate in the poll, it is also possible that others participate, but declare themselves undecided when they deem the questions to be too personal or too intrusive.

These explanations suggest that some undecided respondents are either unable or unwilling to express a clear preference or statement of likely behaviour. It is also possible that a number of respondents are genuinely unable to decide between two or more parties or candidates. The question typically used to elicit voting intentions is absolute and requires respondents to nominate a specific party or candidate for whom they plan to vote.<sup>2</sup> Where respondents feel equivocal, an undecided response is clearly the most accurate way of describing their views.

To date, few researchers have experimented with the structure of the questions used in preelection polls. One exception was Lampert (1978) who developed a pollimeter, which was analogous to a feeling thermometer, and which represented a move away from absolute intention questions. Respondents used a sliding scale to indicate their support for

candidates, although these responses were subsequently dichotomised. However, Lampert's instrument does not appear to have been widely adopted by other pollsters.

Clearly, pollsters are not the only researchers who attempt to predict conditional behaviours; marketers routinely face this problem when estimating consumers' future purchase behaviour. While intention scales remain a widely used instrument in marketing, experiments with a probability scale, the Juster Scale, have suggested that it may offer greater predictive accuracy than the more traditional intention scales.

Developed initially as an alternative to purchase intention scales, the Juster Scale has consistently provided more accurate estimates than intention scales when used to predict consumers' purchase of durable products (Juster 1966; Gabor & Granger 1972; Pickering & Isherwood 1974; Gan, Esslemont & Gendall 1985). Although some questions remain about the Juster Scale's method of administration (Day, Gan, Gendall & Esslemont 1991; Hamilton-Gibbs, Esslemont & McGuinness 1992), and although it cannot be described as an infallible research instrument, it has consistently explained a higher proportion of the variance in purchase behaviour than have intention scales. Because the prediction of voting behaviour is analogous to the prediction of purchase behaviour, it seemed logical to examine whether the Juster Scale enabled more accurate predictions when used to estimate voting behaviour.

Since it is generally agreed that undecided respondents represent a potentially large source of error, and since the size of this group appears unlikely to diminish of its own accord, it seems logical to explore whether the traditional method of dealing with undecided respondents could be improved. At present, pollsters allocate undecided respondents in the same proportions as those respondents who have specified a voting intention. For example, in a poll that produced these results: Party A 32%; Party B 28%; Party C 10%; Party D 5%; undecided 25%; 32% of the undecided group would be allocated to Party A; 28% to Party B, and so on. Clearly if undecided respondents do not vote in the same proportions as those respondents who stated an intention, the poll estimates will be inaccurate.

This study therefore aimed to investigate the following objectives:

- 1. To measure the extent to which changes in question wording and question administration reduced the proportion of undecided respondents. More specifically, to explore the effects of detailed contextual questions, a secret ballot response mechanism, and a probability scale on the proportion of undecided respondents.
- 2. To examine whether any reductions in the size of the undecided group resulted in improvements in the accuracy of the estimates.

## Method

## **Sample and Procedure**

A series of starting addresses were randomly selected from the 1993 electoral rolls published for the Manawatu, Miramar and Western Hutt electorates and sample members were randomly assigned to one of six treatment groups. Interviewers conducted a cluster of six interviews around each starting address and used one of each questionnaire version in every cluster. Households were selected using the "right-hand rule" (i.e., interviewers went to each adjacent house to the right of the starting address). Individuals within each household were selected using the "next birthday" method, until the quota of three males and three females within each cluster had been filled. The order in which the different treatments were presented was rotated across clusters. The research design and sample sizes relating to each treatment are shown in Figure 1.

Two surveys were conducted in each of the three aforementioned electorates making a total of six surveys. The first survey in each electorate was conducted between six to eight weeks

prior to the election, while the second survey was conducted some two to three weeks before the election, held in November, 1993.

Two callbacks were made to those respondents who were either not at home, or who were unavailable at the time the interviewer called. Respondents who were not contacted after two callbacks, or who refused to participate in the study, were deleted from the sample and additional households were added to the cluster until six interviews had been completed around the starting address. The overall response rate was 59.4%. A second survey was conducted by phone within four weeks of the General Election date to ascertain respondents' self-reported voting behaviour. This survey re-interviewed a total of 1987 respondents, representing a response rate of 89.4%.

#### **Instruments**

Figure 1 outlines the six treatments used: direct voting intention question; the same question administered via a secret ballot, and a voting probability question based on the Juster Scale. Each of these three versions of the voting behaviour question was administered with or without a series of contextual questions. The remainder of this section outlines the treatments applied and the hypotheses to which these related.

Developed Context		Reduc	Reduced Context			
Direct Question	(N=713)	Direct Question	(N=715)			
Secret Ballot	(N=679)	Secret Ballot	(N=683)			
Probability Scale	(N=679)	Probability Scale	(N=678)			

Figure 1. Research design

## Context

The contextual questions were designed to help respondents consider their views on various election-related matters prior to predicting their behaviour. The questions used explored respondents' interest in the election, their views on key policy issues, their party identification and party membership, their registration status and their past voting behaviour. In contrast, versions containing reduced context questions explored only respondents' registration status and past voting behaviour before eliciting details of their future behaviour. These questions enabled exploration of the following two hypotheses:

- H<sub>1</sub> That fewer respondents administered the contextual questions will declare themselves undecided.
- H<sub>2</sub> That respondents administered the contextual questions will provide more accurate predictions of their voting behaviour.

## **Confidentiality**

The second treatment employed a secret ballot, a device which simulates actual voting behaviour and which increases the confidentiality associated with respondents' answers. This treatment related to the following two hypotheses:

- H<sub>3</sub> That fewer respondents afforded a higher level of confidentiality would declare themselves undecided.
- H<sub>4</sub> That respondents who used a secret ballot to predict their voting behaviour would provide more accurate estimates than those administered a direct question.

## Relative Probabilities

The final group of respondents used the Juster Scale to estimate the probability that they would vote for each of the parties represented in the election (Appendix A contains details of the voting behaviour questions used). The probability scale questionnaires related to the following hypothesis:

H<sub>5</sub> That respondents who used the Juster Scale to estimate their likely voting behaviour would provide more accurate estimates than those administered a voting intention question.

## Results

## **Effect of Treatments on the Proportion of Undecided Respondents**

This section examines the effects the treatments outlined in Figure 1 had on the proportion of undecided respondents. If  $H_1$  and  $H_3$  are correct, the proportion of undecided respondents would decline as the number of contextual questions and the level of confidentiality increased. Table 1 contains the results relating to these hypotheses.

Table 1. Effects of treatments on the proportion of undecided respondents

	Proportion of undecided respondents
<b>Direct Question</b>	%
Reduced Context (N= 715)	$22.8^{1,3}$
Developed Context (N= 713)	$13.0^{1,4}$
Secret Ballot	
Reduced Context (N= 683)	$4.2^{2,3}$
Developed Context (N= 679)	$1.9^{2,4}$
Probability Scale	
Reduced Context (N= 678)	0.0
Developed Context (N= 679)	0.0

<sup>1.</sup>p < .001

Table 1 reveals that the questionnaire versions containing several contextual questions produced a significantly lower proportion of undecided respondents. Use of the secret ballot also dramatically reduced the proportion of undecided respondents; the level of undecided

<sup>2.</sup>p < .05

<sup>3.</sup>p < .001

<sup>4.</sup>p < .001

respondents resulting from these questionnaires was five to six times lower than where the voting intention question had been administered directly. The most effective way of allocating undecideds is of course to use the probability scale which, by design, eliminates undecideds altogether.

Yet although Table 1 overviews the effects of the different treatments employed, its findings are really no more than what could be surmised after a detailed perusal of the literature. The real question, therefore, is not whether the size of the undecided group can be reduced, but whether these reductions improve the accuracy of the resulting estimates.

## **Effect of Treatments on Accuracy of Voting Intention Estimates**

The remaining three research hypotheses concern the accuracy of the estimates elicited via the different treatments. To test these, two separate analyses were undertaken. First, respondents' predictions were compared to the actual election results. Second, the predicted and self-reported behaviour of a sub-sample of respondents was compared. The absolute differences between the predictions and the actual outcome or respondents' self-reported behaviour were averaged to produce Mean Absolute Errors for each treatments. Table 2 contains details of these errors.

**Table 2.** Errors associated with survey treatments

<b>Questionnaire Version</b>	Mean Absolute Error				
	Actual outcome 1	Self-reported behaviour <sup>2</sup>			
<b>Direct Question</b>		-			
Reduced Context	1.8	3.2			
Developed Context	3.1	4.5			
Secret Ballot					
Reduced Context	2.0	3.8			
Developed Context	2.7	4.1			
<b>Probability Scale</b>					
Reduced Context	4.5	4.6			
Developed Context	4.5	4.9			

<sup>1.</sup> The actual results were calculated by summing the actual vote distributions across all three electorates; because no interviewing was conducted in Whitby, part of the Western Hutt electorate, the results from polling booths located within Whitby were excluded from this aggregation.

Overall, Table 2 suggests that the reduction in undecided respondents was not associated with more accurate estimates. More specifically, examination of  $H_2$ , which posited that respondents administered a developed context treatment would provide more accurate estimates than those who answered a reduced context version, was not supported. Comparison of the predictions to the election outcome reveals that the developed context version has a mean absolute error nearly twice that of the reduced context version.

<sup>2.</sup> The estimates in this table relate to the sub-sample of respondents who were re-interviewed following the election. The sample sizes for each treatment range from 326 to 342.

The same pattern emerges when  $H_4$  is examined. If correct, the secret ballot estimates would be markedly more accurate than those provided in response to a direct question. Yet although significantly fewer undecided respondents resulted from either secret ballot questionnaire, the level of accuracy did not show a corresponding improvement. The reduced context version had a slightly lower mean absolute error than the developed context version, but neither was more accurate than the reduced context direct question version.

The final research hypothesis held that the estimates calculated using the Juster Scale would be most accurate since this method allowed respondents to allocate relative probabilities and so accommodated people who held conflicting intentions. Yet as Table 2 shows, the versions which used this methodology were associated with the highest mean absolute errors. Indeed, the errors associated with these versions were nearly three times that of the reduced context direct version when the predictions were compared to the election outcome.

Although some of the differences in the mean absolute errors relating to respondents' predicted and self-reported behaviour were not marked, the same trends were apparent. Overall, the version with the highest level of undecided respondents produced the lowest mean absolute error, the versions with no undecided respondents had the highest error levels, and in all cases the reduced context versions resulted in lower mean absolute errors than the developed context versions.

## **Discussion**

The findings reported above are clearly not in the direction hypothesised. Though it is not possible to establish exactly why the predicted pattern of results did not appear, some explanations merit further research attention. First, researchers use contextual questions because they believe these help respondents to recall events or circumstances that, in turn, enhance their ability to predict their behaviour (see Labaw 1980; Sudman & Bradburn 1982). However, others have noted that extensive contextual questions may introduce error by making respondents consider issues that might not otherwise have occurred to them (see Crespi 1988). Crespi suggested that respondents who had earlier supported policies associated with a specific party may not wish to appear inconsistent by declaring that they intend to vote for a different party. In other words, respondents may have provided answers that were consistent with their earlier responses, even if those responses are not indicative of their likely voting behaviour (see Bradburn & Sudman 1988; Smith 1992 for a more detailed discussion of this problem).

The reduced context versions explored only respondents' registration status and past voting behaviour before eliciting their likely voting behaviour. Table 2 suggests that a context limited to analogous or precursor behaviours produces more accurate estimates than broader contexts. Inconsistencies between consumers' attitudes and subsequent behaviour have been well documented in marketing and survey research (see Nord & Peter 1980; Driver & Foxall 1986) and the inclusion of attitudinal questions in the developed context version may have distorted respondents' behavioural predictions. Thus the more specific behavioural questions asked prior to the voting intention question in the reduced context version may be all that is required to help respondents predict their behaviour. Future research could explore in more detail the construction and performance of various behavioural questions in creating a context for voting intention questions.

An alternative possibility is that respondents who participate in pre-election polls may change their likely voting behaviour as a consequence of their interview experience. As Bogart (1967) noted: "The paradox of scientific method is that we change phenomena by measuring them" (p. 335). There is a growing body of research which has documented the relationship between participation in a pre-election poll and turnout in that election. However, while this phenomenon is well established, the relationship between responding to a poll and formulating party or candidate preferences is less clearly defined. Although some research has explored the effects of poll publication (as opposed to participation) on electorate behaviour, researchers are not yet in a position to estimate either the precise effects of an interview, or the consequences of publication of poll results on respondents (see Bradburn & Sudman 1988). Consequently, while respondents administered the developed contextual version may have become more reflective and may, as a consequence, have deviated from their predicted behaviour, the extent to which this occurred, if it occurred at all, remains speculative.

A further explanation of the relative inaccuracy of the developed context versions recognises growing public cynicism toward politicians and political parties. The public have become increasingly aware of the weight politicians place on political polls (despite their stated views to the contrary), thus registering dissatisfaction with a party or parties' performance via a poll has become an effective means for the public to communicate with politicians. Respondents asked a range of attitudinal questions may have more opportunity to reflect on any messages they wish to send politicians. By comparison, those who answer only a couple of preliminary questions seem less likely to have considered the same range of policy issues prior to indicating their likely behaviour. As a consequence, the latter group's responses may have been shaped more by their previous behaviour than by their views on the inadequacies or otherwise of different parties' policies. While this reasoning is speculative, it is nevertheless consistent with the public's increasing media literacy, and with the research results documented here (see Hoek & Gendall 1996).

Although both secret ballot versions produced a significant reduction in the proportion of undecided respondents, neither proved more accurate than the reduced context version. Again, several explanations are possible. Perry (1979) noted that differences in party support estimates between secret ballot and direct questionnaires were greater than the reduction in the size of the undecided group. In so doing, he raised the possibility that secret ballots may introduce more error than they remove. However, Perry did not develop this hypothesis further and his suggestions remains only a possible explanation of the observed error.

The secret ballot voting slips provided to respondents did not contain an undecided option and it is possible that, without an explicit undecided or non-voting option, respondents may have nominated one of the parties listed simply in order to complete the task they had agreed to perform. However, this reasoning is speculative, and there is no way of verifying what respondents had in their minds as they completed the survey. Since the secret ballot technique did not improve the accuracy of the estimates, and given the expense of administering this more cumbersome technique, a secret ballot methodology does not appear to offer benefits which outweigh the costs of its administration.

Examination of the probability scale results in Table 2 reveals that where respondents could allocate relative probabilities, the highest mean absolute errors resulted. Analysis of the survey questionnaires and feedback from interviewers suggested that many respondents did not understand how probabilities worked. For example, although the sum of the probabilities

of voting for each party should have equalled respondents' overall probability of voting, in many cases this value exceeded one, a problem noted by other researchers (see Hoek & Gendall 1993; Seymour, Brennan & Esslemont 1994). Because some respondents did not make the trade-off between parties that was implicit in the survey questions, it seems likely that a more explicit constant-sum methodology may be necessary to provide an adequate test of the Juster Scale. As a result, the data in Table 2 do not represent a clear test of the scale's predictive accuracy, since it is not possible to differentiate the level of error caused by respondent mis-use of the scale from that associated with the scale itself.

While it is also possible that other sources of error, such as interviewer error or sampling error, contributed to the discrepancies observed, it seems likely that these errors would have been randomly distributed and so would have affected all versions equally.

## **Conclusions**

These results suggest that, while dramatic reductions in the proportion of undecided respondents are possible, such reductions are not necessarily accompanied by increases in the accuracy of the resulting estimates. Indeed, the results suggest an inverse relationship between the level of undecided respondents and poll accuracy, a finding at odds with earlier work, much of which noted that decreases in poll accuracy occurred as the proportion of undecided respondents increased (Daves & Warden 1993).

These results do not disprove the relationship posited by earlier researchers, but they suggest that the mechanisms used in this study to reduce the number of undecided respondents were less successful than simple proportional allocation of this group. However, because respondents' understanding and use of the Juster Scale varied, and because of its intuitively appealing property of eliminating the undecided group completely, we believe it merits further investigation. Future research could use a constant-sum methodology to force respondents' voting probabilities to sum to one, or to their overall probability of voting (see Brennan, Hini & Esslemont 1994). This would enable a better assessment of the Juster Scale's reliability in this context, and of its performance relative to alternative methods of dealing with undecided respondents.

Overall, these results suggest that neither secret ballots nor the use of extended contexts increases the accuracy of poll estimates. Until alternative methods of reducing or eliminating the undecided group have been empirically established as superior, pollsters should continue to use direct intention questions together with reduced contextual questions, and the resulting undecided respondents should be allocated proportionately.

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Janet Hoek is a Senior Lecturer and Philip Gendall is Professor of Marketing and Head of Department, Department of Marketing, Massey University.

#### **Footnotes:**

- 1. Polls with high numbers of undecided respondents can reflect actual election outcomes if the undecided respondents vote in the same proportions as those respondents who have declared an intention; the research to date suggests that respondents who declare themselves undecided display different patterns of voting behaviour to those who do declare an intention (Hoek & Gendall, 1993).
- 2. The question usually put to respondents is a variation of the following:
  - If the election were held today/yesterday/tomorrow, which party would you vote for?

## Appendix A

## Direct Questions employed

6C. If this year's General Election had been held yesterday, which party would you have voted for?

CIRCLE ONE NUMBER IN ROW 6C BEL			LOW DO NOT PROMPT				
IF OTHER, SPECIFY	PARTY	HERE					
	Alliance	Labour	National	NZ First	Other	None	Don't Know
Q6B. 1990 Voting	1	2	3	4	5	6	7
Q6C. Vote Yesterday	1	2	3	4	5	6	7

Secret Ballot Question employed

Please take this ballot paper and place a tick beside the party you would have voted 6C. for if this year's General Election had been held vesterday. Once you have done this, please fold your ballot paper and place it inside this box.

GIVE RESPONDENT A BALLOT PAPER.
NOTE THE NUMBER ON THE BALLOT PAPER HERE
HOLD THE BALLOT BOX FOR RESPONDENT TO PLACE HER/HIS PAPER IN.

## **Voting Probabilities Question employed**

7. Now, please look at this card. It describes a series of chances, or likelihoods, that you might do something. It works like this. If I asked you how likely it is that you will eat out at a restaurant in the next month, and you were certain, or practically certain you will do this, you would answer 10. On the other hand, if you thought there was no chance, or almost no chance, of this happening, you would answer 0. If you are uncertain about doing this, you would choose another answer as close to 0 or 10 as you think it should be. Please take a moment to read this scale.

## SHOWCARD B

Now, using this scale, please tell me how likely it is that you will eat out at a restaurant during the next month?

IF RESPONDENT ANSWERS WITH A WORD DESCRIPTION, ASK "WHAT NUMBER IS THAT"?

DO NOT CIRCLE. THIS IS A TEST QUESTION ONLY.

Still using this card, if this year's General election had been held yesterday, please tell me how likely it is that you would have voted for the (START AT ASTERISKED PARTY) candidate?

IF RESPONDENT ANSWERS WITH A WORD DESCRIPTION, ASK "WHAT NUMBER IS THAT"?

CIRCLE APPROPRIATE NUMBER IN ASTERISKED COLUMN AND REPEAT QUESTION FOR REMAINING PARTIES WORKING TO THE RIGHT OF THE ASTERISK.

ALWAYS ASK <u>OTHER</u> LAST. REPEAT JUSTER NUMBER TO RESPONDENT AS A CHECK.

	Alliance	Labour	National	NZ First	Other	Vote
Certain/practically certain (99/100)	10	10	10	10	10	10
Almost sure (9/10)	9	9	9	9	9	9
Very probable (8/10)	8	8	8	8	8	8
Probable (7/10)	7	7	7	7	7	7
Good possibility (6/10)	6	6	6	6	6	6
Fairly good possibility (5/10)	5	5	5	5	5	5
Fair possibility (4/10)	4	4	4	4	4	4
Some possibility (3/10)	3	3	3	3	3	3
Slight possibility (2/10)	2	2	2	2	2	2
Very slight possibility (1/10)	1	1	1	1	1	1
No chance, almost no chance (1/100)	0	0	0	0	0	0