

## Political Involvement and Memory Failure as Interdependent Determinants of Vote Overreporting

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### SUMMARY

Survey respondents have been found to systematically overreport their participation in political elections. Although the sociodemographic correlates of this response bias are well known, only a few studies have analysed the determinants predicted by two prominent theoretical explanations for vote overreporting: memory failure and social desirability (SD) bias. Both explanations have received empirical support in studies in which the probability of vote overreporting was found to increase (a) with the time between the election and the survey interview and (b) when respondents were politically involved to a larger extent. In the present paper, we argue that the effect of each of these determinants is not simply additive but depends on the value of the respective other factor. This interaction effect has been found with data from the American National Election Studies: The probability of vote overreporting increases significantly more strongly with the respondents' political involvement when more time has elapsed since the election day. Copyright © 2007 John Wiley & Sons, Ltd.

Research about the determinants of electoral participation relies heavily on retrospective survey reports about whether respondents voted in the election under consideration. However, these self-reports have been found to be highly susceptible to response bias in the direction of subjects falsely reporting to have voted (cf. Belli, Traugott, Young, & McGonagle, 1999; Presser, 1984). Based on data from the American National Election Study (ANES), between 7.8 and 14.2 per cent of all respondents reported that they voted, although they did not (Belli, Traugott, & Beckmann, 2001). In Great Britain, this percentage was 3 per cent in 1987 and in Sweden between 3.2 and 5.9 per cent in elections from 1979 to 1988 (Granberg & Holmberg, 1991; Swaddle & Heath, 1989). Although unsystematic biases in reports about voting may not pose a serious problem for participation research, this is the case when groups of respondents with certain characteristics are differently prone to overreporting. The resulting correlation between these characteristics and self-reported voting wrongly suggests real differences in the disposition to vote. Empirical evidence has shown that vote overreporting indeed biases the associations found in studies about the determinants of political participation (Bernstein, Chadha, & Montjoy, 2001; Cassel, 2003).

The subjects' political involvement is a frequently utilised factor to explain the participation in political elections. However, vote overreporting was found to increase

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substantially with the respondents' political involvement, measured by their political interest (Granberg & Holmberg, 1991; Presser, 1984) and the strength of their party identification (Bernstein et al., 2001). These differences may result from the fact that respondents who are more politically involved hold stronger participation norms, thus assume voting to be more socially desirable and consequently perceive stronger incentives to overreport voting. Aside from differences in incentives for social desirability (SD) bias, cognitive factors were found to be relevant as well. Accordingly, subjects are increasingly more likely to wrongly report to have voted when more time has elapsed between the election and the survey interview (Abelson, Loftus, & Greenwald, 1992; Belli et al., 1999). This effect has been explained to result from the fact that behavioural episodes longer ago are less available in memory and thus more likely to be misreported. Consistent with this explanation, other kinds of response effects have been found to be stronger when the requested behaviour or attitudes are less cognitively available (Lavine, Huff, Wagner, & Sweeney, 1998; Stocké, 2004a; for inconsistent results cf. Bassili & Krosnick, 2000).

From the theoretical perspective of Rational-Choice Theory (RCT), it is expected that greater difference in perceived desirability of voting and not voting, associated with a higher political involvement, and the insufficient information availability due to elapsed time since the election, are interdependent determinants for vote overreporting. Thus, increasing incentives for socially desirable responding are predicted to have a stronger positive effect on the probability of vote overreporting when the behavioural episode of voting is less available in memory (Stocké, 2004c). Accordingly, political involvement and the elapsed time since the election are expected to explain the susceptibility to vote overreporting in interaction. This effect has not been tested yet in previous research.

## THEORETICAL FRAMEWORK

RCT assumes that answering a survey question is a goal-directed, instrumentally rational selection between response options (Stocké, 2004c). Respondents in survey interviews are assumed to be motivated to realise two different goals. *First*, they strive for answering questions in a way which represents their true inner beliefs, feelings and evaluations. This goal originates on the one hand from their need for expressive authenticity, with the aim to reaffirm their personal identity. On the other hand, subjects are motivated to comply with norms of honesty and thus to avoid psychic costs from deliberately telling a lie. This accuracy motive strongly affects survey responses when the respondents have a clear conviction about the true response, and has no effect when all responses are regarded as equally (in-)valid since no relevant information is cognitively available.

*Second*, respondents strive for answering survey questions in a way that creates a positive impression in others, which thus realises social approval. In order to gain approval of others, subjects select the response option they regard to be most socially desirable and which is thus expected to provoke positive reactions. However, this motive only leads to SD bias when respondents perceive desirability *differences* between the response options. Since desirability beliefs are based on social norms (Stocké, 2004c), SD bias should affect survey responses more strongly when subjects hold stronger norms, and thus the response options are perceived to be evaluated more differently.

Depending on the consistency between the respondents' true traits and those they believe to be most socially desirable, their accuracy motive and need for social approval have identical or conflicting implications for survey answers. In the case of consistency, the joint

effect of both motives ensures a reliable selection of responses representing their true inner state. The accuracy motive, however, contributes less to response validity when the requested information is less available in memory. When the respondents' characteristics are inconsistent with those regarded as socially desirable, the relative strength of the two then conflicting motives determines survey reports. Respondents will be more likely to select the socially desirable answer either when the perceived desirability differences between the response options increase or when the accuracy motive becomes weaker due to memory problems. Furthermore, response behaviour is more strongly determined by either of the two motives when the respective other becomes less dominant. Thus, equal desirability differences cause stronger SD bias when this tendency is less counterbalanced by clear beliefs about which response option represents the true answer.

Norms of civil engagement prescribe voting to be a citizens' duty, and thus, respondents assume a report of electoral participation to be more socially desirable than to answer that they did not vote. The strength of these norms may increase with the respondents' political involvement. As a consequence, the difference in the perceived social desirability of having voted and not having done so is expected to be much greater for more politically involved respondents. Consistent with this assumption, subjects with higher political involvement were found to feel a stronger obligation for electoral participation (Knack, 1992). Hence, in agreement with empirical results, political involvement is *first* assumed to lead to a higher probability of overreporting. *Second*, behavioural episodes which are longer ago are less available in memory (Tourangeau, 2000). Consistent with previous research as well, respondents who are asked about their electoral participation later in the field period of a post-election study will be less motivated by accuracy, and thus vote overreporting will be more prevalent.

The less respondents remember whether they actually voted at a certain election, the less their accuracy motive counterbalances incentives for SD bias. For subjects interviewed later after an election, differences in the desirability of responses, and thus their political involvement, should more strongly affect their susceptibility to overreport voting. Therefore, we expected political involvement and elapsed time in interaction to explain the respondents' susceptibility to overreport voting. The main aim of our empirical study is to test this hypothesis.

## PREVIOUS RESEARCH

Abelson et al. (1992) analysed the effect of increasing time between the election and the survey interview with post-election data from US-American elections. They found that 5 months after the election in 1986, the percentage of non-voters who reported to have voted was 16.3, and this proportion increased to 40.0 per cent for interviews conducted 6.5 months after the election. The results for the primary election in 1988 were similar. However, for the presidential election in 1988, vote overreporting did not differ significantly for interviews conducted either 5 or 8 months after the election day. More evidence for the role of time differences was found in a telephone survey, conducted nationwide after the US-presidential election in 1996 (Belli et al., 1999). Shortly after the election in November, 59.8 per cent of the respondents reported they voted, and this figure increased significantly to 74.9 per cent by the end of the survey in January 1997. In another study, conducted in Oregon after the senate election in 1996, it has been shown that in the first week after the survey, 15.5 per cent of the respondents wrongly reported to have voted,

and this figure grew statistically significantly to 29.2 per cent later during the field period (Belli et al., 1999). In contrast to our theoretical approach, in this study the effect of elapsed time has been interpreted using the source-monitoring framework. In this approach, respondents, when asked about their participation in a particular election, are assumed first to search for memory characteristics associated with the act of voting (Johnson, Hashtroudi, & Lindsay, 1993). Such characteristics may exist because the respondent voted in the election under consideration, because of having participated in another election or even because of merely having thought about voting. Thus, subjects are expected in a second step to attribute these characteristics to a particular source. The criterion hereby is how closely different kinds of context information, stored together with the memory characteristics, match those associated with a particular source. Since this information is often imperfectly available in memory and source attributions are frequently made in a heuristic mode of information processing, respondents are prone to misattribute the origin of memory characteristics to a wrong source. This may happen because memory of an act of voting is attributed to the wrong election (faulty external source monitoring), or because having thought about voting is confused with really having done so (faulty internal-external source monitoring). Source confusions are more likely when contextual details, suitable to identify the appropriate source, are less cognitively available, because the respective election is longer ago (Belli et al., 1999).

More evidence for memory problems leading to stronger overreporting was provided in a study where respondents were asked whether they participated in elections held on average 44, 92 and 148 months before the survey interviews, and this was done in two surveys, where the second one was conducted 11 months after the first one (Stocké, *in press*). The survey-estimated turnout rate was for all elections and in both surveys higher than the official outcome. This discrepancy was stronger when subjects answered questions about elections longer back in time and in the later survey.

A few studies tested the hypothesis that SD bias is the causal mechanism underlying vote overreporting. In an experimental study, subjects were instructed to answer questions about their electoral participation either in a way to provoke positive or negative evaluations from others (Holbrook, Green, & Krosnick, 2003). Subjects under the 'fake good'-instruction claimed significantly more often to have voted than those under the 'fake bad'-condition: Reporting to have voted was assumed to be more instrumental for creating a positive impression. Since impression management-based SD bias depends on others being able to perceive the responses, more overreporting is expected under low response privacy. Empirical evidence regarding this hypothesis is mixed. In a study with individual-level validation data, overreporting voting in the 1972 US-primary election has been found not to differ between self- and interviewer-administered interviews (Locander, Sudman, & Bradburn, 1976). Another study compared the percentage of respondents claiming to have voted in three federal elections in Germany when they answered the questions either self- or interviewer-administered (Stocké, *in press*). Subjects were significantly more likely to report to have voted in interviewer-administered interviews. Furthermore, the aggregate survey measure for electoral turnout did not differ significantly from the official figures under self-administration, whereas interviewer-administration leads to a significant overestimation of the participation rate.

Several studies tested the effect of political involvement on vote overreporting. Presser (1984) found, with validated self-reports from the Denver Community Study, that the probability of falsely reporting to have voted in five different elections significantly increased with the respondents' political interest. This effect was replicated with data from

a post-election study in Sweden (Granberg & Holmberg, 1991) and with data from the ANES 1964–1990 (Belli et al., 2001). In these studies, as well as in one with ANES data from 1980 to 1988 (Bernstein et al., 2001), the prevalence of overreporting increased with the strength of the respondents' party identification. Furthermore, respondents from Great Britain, New Zealand and the US with a stronger sense of civic duty more likely overreported voting (Karp & Brockington, 2005).

The study by Belli et al. (1999) tested whether modified question wordings reduce vote overreporting. In the experimental question wording, respondents were asked to think about different details from the election day and then to consider carefully whether they really voted in the respective election. The aim was to improve the cognitive availability of the behavioural episodes. Furthermore, besides the response options 'yes' and 'no', the additional alternatives 'I thought about voting this time but didn't' and 'Usually I vote but didn't this time' were added. This modification was introduced to let respondents perceive not having voted to be less undesirable and thus to reduce socially desirable responding. Compared with the standard ANES-question wording, the experimental one reduced overreporting after the 1996 senate election in Oregon and the 1996 US-presidential election. In particular, the question wording was more effective when a longer time had elapsed since the election day. From our theoretical perspective, this interaction effect may result from narrowing down the perceived differences in the desirability of having and not having voted. If this is what happened, the difference in incentives for SD bias between the standard and modified question wording had stronger effects when the true participation behaviour was less available in memory.

## EMPIRICAL STUDY

The aim of this study is to test the hypothesis that the respondents' political involvement and the amount of time elapsed between the election and the survey interview are interdependent determinants for the probability of vote overreporting. The following data and operationalisations were utilised to realise this aim.

## DATA AND MEASURES

The analyses were conducted with the 1948–2002 ANES Cumulative Data File from 2005. We utilised all studies from those years with national elections in which the respondents were asked about their electoral participation, and these reports were validated with data from official voter registers.<sup>1</sup> As the only exception, following the suggestion of Belli et al. (2001), we did not include the ANES panel study, which was conducted between 1972 and 1976.<sup>2</sup> Thus, our data consisted of the post-presidential election studies of 1964, 1980, 1984 and 1988, and the surveys conducted after the Congress elections in 1978, 1986 and 1990. The relevant variables were the following:

<sup>1</sup>The validation of the vote reports has been conducted in all ANES studies after the end of the field period in spring of the year after the election. Only in 1964, the validation has been completed in the period between the end of 1965 and spring 1966 (Traugott, 1989). In this particular study, much more time has elapsed between the election and the validation.

<sup>2</sup>The reason for not including this study is the strong sample-selection bias caused by panel attrition (see Belli et al., 2001 for more details).

Table 1. Respondents' self-reported and validated electoral participation in American National Election Studies (ANES)

Year of election	Validated voters (%)	Admitted non-voters (%)	Overreporters (%)	Underreporters (%)	Total % (N)
1964 (P)	65.4	21.7	12.6	0.4	100.0 (1450)
1978 (N)	41.1	44.5	13.2	1.3	100.0 (2299)
1980 (P)	60.4	28.3	10.9	0.4	100.0 (1408)
1984 (P)	63.7	26.2	9.9	0.2	100.0 (1989)
1986 (N)	43.5	47.2	9.0	0.3	100.0 (2174)
1988 (P)	59.7	29.7	9.9	0.7	100.0 (1773)
1990 (N)	38.8	51.9	7.8	1.5	100.0 (1980)
Total	51.9	37.0	10.4	0.7	100.0 (13072)
Subsample included in the study: validated non-voters					
1964 (P)		63.3	36.7		100.0 (496)
1978 (N)		77.1	22.9		100.0 (1325)
1980 (P)		72.2	27.9		100.0 (553)
1984 (P)		72.6	27.4		100.0 (719)
1986 (N)		84.0	16.0		100.0 (1222)
1988 (P)		75.1	24.9		100.0 (702)
1990 (N)		87.0	13.0		100.0 (1182)
Sub-total		78.1	21.9		100.0 (6199)

P = Presidential election; N = Non-presidential election.

*Vote overreporting:* In the upper part of Table 1, the validation results of the respondents' reports about their electoral participation are presented. *First*, as found in other studies, the prevalence of non-voters falsely reporting to have voted is much higher than that of validated voters failing to report their electoral participation: Only a proportion of between 0.2 and 1.5 per cent of all respondents did not report their participation in the elections, but between 7.8 and 13.2 per cent answered that they voted but actually did not. On average across all seven elections, 0.7 per cent of the respondents were classified as underreporters, but 10.4 per cent overreported their participation. Thus, the respondents' errors are by no means random, but systematically in the direction of overreporting. *Second*, we found a trend in the direction of less overreporting in more recent elections: In 1964, there were 12.6 per cent overreporters, and this proportion decreased monotonically to 7.8 per cent in the ultimate election in 1990.

An important question is in which way to construct the dependent variable for our analysis. Two different approaches have been utilised in the literature. In the first one, only validated non-voters, and thus the population at risk for overreporting, is included in the analysis (Anderson & Silver, 1986; Bernstein et al., 2001). It is then tested what explains whether subjects admit their failure to have voted or falsely report an electoral participation. The second approach is to include those respondents who reported to have voted and to analyse what determines whether respondents really voted or overreported their participation in elections (Belli et al., 1999). In our view, vote overreporting is the joint result of a two-stage decision process. First, all eligible citizens have to choose whether or not to participate in a particular election. In the second step, during the interview, they have to decide whether they will report a possible non-participation or not. The first decision is about participation behaviour, the second one about response behaviour. In the case in which only self-reported voters are included in the analysis, the focus is on the explanation of why they voted or not,



and thus on their participation decision. However, in our study, we restrict our analysis to response behaviour and thus to the question about what determines correct or incorrect answers, given the decision not to vote in the first step of the decision process. Thus, we only included non-voters in our analysis, and categorized all self-reported voters for whom no voting records were found as overreporters (coded 1), and those who reported not to have voted as admitted non-voters (coded 0).

As presented in the lower part of Table 1, the percentage of non-voters who inaccurately reported to have voted differed considerably between the elections included in our analysis: Whereas this proportion varied between 13.0 and 27.9 per cent in the elections between 1978 and 1990, the size of this group rose to 36.7 per cent in 1964. Non-voters in 1964 were significantly more susceptible to overreporting, compared with those in all other elections ( $p < 0.05$ ). Moreover, validated non-voters showed a lower probability to report to have voted in the non-presidential elections of 1978, 1986 and 1990. With the exception of the difference between the election in 1978 and that in 1988, all contrasts between presidential and non-presidential elections proved to be significant.

*Political involvement:* Consistent with other studies of the determinants of vote overreporting, we utilised three indicator variables in order to determine the degree of the respondents' political involvement. These were (a) the respondents' reports about the strength of their party identification, (b) those about their interest in the election campaign and (c) their general interest in governmental and public affairs.<sup>3</sup> The first two variables were measured on a four-point and the latter on a three-point response scale. We assume that only respondents with a high political involvement, compared with those with medium or low involvement, hold stronger participation norms and thus regard voting to be substantially more socially desirable. Thus, we first created a set of dummy variables, indicating whether a respondent selected the most extreme response category, expressing the strongest party identification, the highest political interest and the strongest interest in public affairs. A value of one indicated a maximum of political involvement and a value of zero a lower level. Due to the nominal nature of these measures, we utilised principal-component analyses with tetrachoric correlations in order to test the dimensionality of the measures. Separate results showed for each of the election years that the three measures formed a single latent dimension (see Table A1 in the Appendix). We therefore constructed an index of political involvement by combining the three dummy variables into a simple additive index and divided the resulting measure by the number of questions answered by each respondent. The index finally ranged from 0 (no answer indicated a high political involvement) to 1 (all answers indicated a high political involvement). For the elections between 1978 and 1990, the average index values were similar and ranged between 0.15 and 0.18, indicating that the respondents had a low political involvement (cf. Table 2, first column). Only the elections in 1980 and 1990

<sup>3</sup>The question wording was as follows (response coding in parenthesis): *Strength of party identification:* 'Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or what?'; if Republican or Democrat: 'Would you call yourself a strong (Republican/Democrat) (4) or a not very strong (Republican/Democrat) (3)?'; if Independent, other or no preference: 'Do you think of yourself as closer to the Republican or Democratic party?' (close (2) vs. absolutely independent (1)). *Interest in political campaigns:* 'Some people don't pay much attention to political campaigns. How about you, would you say that you were very much interested (3), somewhat interested (2), or not much interested (1) in following the political campaigns this year?'. *Interest in public affairs:* 'Some people seem to follow what's going on in government and public affairs most of the time, whether there's an election going on or not. Others aren't that interested. Would you say you follow what's going on in government and public affairs most of the time (4), some of the time (3), only now and then (2), or hardly at all (1)?'.

Table 2. Respondents' political involvement and the time elapsed between the election day and the survey interview

Election year	Index of political involvement	Elapsed time between election and interview (days)
	Mean (Std.)	Mean (Std.)
1964 (P)	0.28 (0.32)	25.0 (16.5)
1978 (N)	0.15 (0.25)	21.2 (16.4)
1980 (P)	0.18 (0.27)	20.3 (13.9)
1984 (P)	0.17 (0.26)	15.1 (11.7)
1986 (N)	0.17 (0.26)	20.8 (18.4)
1988 (P)	0.17 (0.25)	16.9 (13.1)
1990 (N)	0.18 (0.26)	20.2 (16.2)
Total	0.18 (0.26)	20.0 (16.0)

P = Presidential election; N = Non-presidential election.

differed significantly from the one in 1978. However, in the case of the election in 1964, the political involvement was 0.28 and thus 40 per cent higher, compared with the average of all other elections. As in the case of the probability of vote overreporting, the election in 1964 differed significantly from all other election years ( $p < 0.05$ ).

*Memory failure:* We expected that the respondents experienced increasingly more problems in remembering whether they participated in the election under consideration when increasingly more time had elapsed between the election day and the survey interview. Hence, we computed for each respondent this time distance in days. As a result, we found that there was a tendency for less time to be necessary to conduct post-election interviews after presidential elections (cf. Table 2, second column). While after the 1964 election, on average 25.0 days were needed to complete the post-election interviews, in 1980 these were 20.3 days, 15.1 days in 1984, and 16.9 days in 1988. Each of these reductions was statistically significant ( $p < 0.05$ ). However, in the years of non-presidential elections, the length of the field period remained relatively stable at around 20 days, and none of the differences between the elections have proven to be statistically significant ( $p > 0.05$ ). Again, the election in 1964 must be regarded as an extreme case: With the exception of the elections in 1978 and 1990, it took in all other years significantly less time to complete the survey interviews.

*Source monitoring:* Other researchers have assumed that respondents confuse either to have only thought about voting or to have participated in other elections in the past with having actually voted in the election under consideration. From the perspective of this alternative explanation, it is expected that respondents who intended to vote in the target election and those who more often voted in other elections should be more prone to vote overreporting: In both cases, the higher number of available memory characteristics increases the risk of source confusion. Since political involvement is strongly associated with the participation in political elections (Voogt & Saris, 2003), and may also lead subjects to have more often thought about voting, source monitoring and not social desirability could actually be the mechanism why this trait is associated with more vote overreporting. The greater opportunity for misattribution, associated with a stronger involvement, can be furthermore expected to have stronger effects on the probability of vote overreporting, when the cognitive representation of the episode of voting under consideration is weaker because more time has elapsed since this episode. We tested at



Table 3. Frequency of participation in past presidential elections

Participated in:	ANES study 1964	ANES study 1980
	<i>N</i> (valid %)	<i>N</i> (valid %)
All	128 (29.6)	95 (19.3)
Most	91 (21.1)	102 (20.7)
Some	108 (25.0)	147 (29.9)
None	105 (24.3)	148 (30.1)
Were not eligible	64	48
Missing	—	13
Total	496	553
Valid total	432 (100.0)	492 (100.0)

least partially for this possibility by including how frequently the respondents participated in elections before the one which was the topic of the respective post-election survey. This variable is regarded as an indicator for how many instances of having voted in other elections are available in the respondents' memory and thus for the risk of faulty external source monitoring. Since we do not have data about whether and how intensively the respondents were thinking about voting in the election under consideration, we cannot control for faulty internal-external source monitoring. However, the explanatory power of our expected interaction effect between elapsed time and political involvement should be at least partially absorbed when the interaction between the time factor and how frequently the respondents voted in the past, and thus the opportunity for external source confusion, is controlled in the regression analysis. In order to test this, we utilised the respondents' reports about how often they voted in all presidential elections since they have been eligible to vote.<sup>4</sup> Unfortunately, this question is only available for the ANES in 1964 and 1980. According to the response distributions shown in Table 3, in 1964, 29.6 per cent of the respondents reported to have participated in all, 21.1 per cent in most, 25.0 per cent in some and 24.3 per cent in none of the past elections, whereas these proportions were 19.3, 20.7, 29.9 and 30.1 per cent in 1980.

## RESULTS

We tested the hypothesis that the incentives for vote overreporting associated with a higher political involvement have stronger effects on the probability of overreporting when more time has elapsed between the election and the survey interview. On the level of statistical hypothesis testing, this implied that a positive interaction effect between the factors is expected to explain the probability of non-voters to falsely report to have voted. In order to hold all other variables known to influence vote overreporting constant, and to test whether their effect can be replicated, we included *first* the respondents' age, their sex, race and their subjectively perceived social class in the analyses.<sup>5</sup> *Second*, we constructed an index representing the subjects' political

<sup>4</sup>Question wording: 'In the elections for president since you have been old enough to vote, would you say you have voted in (1) all of them, (2) most of them, (3) some of them, or (4) none of them?'

<sup>5</sup>The following indicator for social class has been used: 'average working class' (1), 'upper working class' (2), 'average middle class' (3), 'upper middle class' (4). Since the answers were recorded in a less differentiated way in 1964, it was only possible to code the respondents into either 'working class' (1) or 'middle class' (3).

efficacy and controlled for this in the analyses. This index was computed by adding up the answers on three items with dichotomous response options (0 = low efficacy, 1 = high efficacy) and then dividing the result by the number of answers which were available for each respondent.<sup>6</sup> The results ranged from 0 (no feeling of efficacy) to 1 (strong feeling of efficacy). *Third*, we controlled for how familiar the respondents were with the candidates in the particular elections. Respondents reported the names as well as the party affiliations of up to three candidates for Congress, and the number of correct answers was counted (0 = no name and affiliation correct, 6 = all correct).<sup>7</sup> After normalising this measure, it ranged from 0 (no familiarity) to 1 (high familiarity). This measure is available for the elections in the period from 1978 to 1990, but the underlying items were not asked in 1964. *Fourth*, subjects were asked how much they cared which candidate or party would win the election (response options: 'Don't care very much', 'Care a good deal' and 'Care very much').<sup>8</sup> Responses were dichotomised and the resulting variable varied between 0 ('Don't care very much' or 'Don't know') and 1 ('Care a good deal' or 'Care very much'). *Fifth*, we controlled for differences in overreporting between the election years by including dummy variables for these elections in the regression equation. In order to prevent a sample-selection bias due to the listwise deletion of cases with missing values on the control variables, we included missing dummies for these variables. Due to space limitations, the regression coefficients for these variables are not reported.

The outcome variable of our analysis is binary, and so, we estimated logistic regression models. Since the election in 1964 has proven to be an exceptional case with respect to the prevalence of vote overreporting and the value of all explanatory variables, we ran separate analyses for this election and the cumulative data from the other election years. For each of the two samples, we first estimated models with only the control variables and the main effects of the political involvement as well as the time elapsed since the election day. In a second step, we then included the interaction effect between the subjects' political involvement and the time distance in the regression equations.<sup>9</sup>

The results from regression model 1, presented in Table 4 with the 1978–1990 cumulative ANES data, were in most respects consistent with those found in previous research. *First*, respondents who classified themselves in a higher social class proved to be more susceptible to vote overreporting: Compared with subjects who felt they belonged to the working class, those who expressed an affiliation with the upper middle class were

<sup>6</sup>This index was constructed from the answers to the following questions: 'Please tell me whether you agree or disagree with these statements: (1) I don't think public officials care much what people like me think. (2) People like me don't have any say about what the government does. (3) Sometimes politics and government seem so complicated that a person like me can't really understand what's going on'.

<sup>7</sup>Question wording: 'Do you happen to remember the names of the candidates for Congress, that is, for the House of Representatives in Washington?'; 'Which party does this candidate belong to?'

<sup>8</sup>Question wording: 'Generally speaking, would you say that you personally care a good deal which party wins the presidential election this fall, or that you don't care very much which party wins?' (after presidential elections); 'How much would you say that you personally cared about the way the elections to the US House of Representatives came out?' (after non-presidential elections).

<sup>9</sup>In order to avoid the standard errors of our regression coefficients to be underestimated due to a possible lack of independence of respondents within the sampling units of the multistage probability sample, we utilised Huber-White estimators for robust standard errors in all regression analyses, with the primary sampling areas defining the clusters (STATA Corporation, 1999, p. 165 ff.). Since all ANES studies included in our analysis were cross-sectional and based on equal probability samples, applying post-stratification weights is neither necessary, nor are such weights included in the data (cf. the information on the study homepage: <http://www.umich.edu/~anes/studypages/cdf/cdf.htm>). However, as recommended by the ANES, we weighted the data by the number of eligible respondents in the households in order to compensate for unequal selection probabilities due to differences in household size. Neither controlling for the clustering of the data, nor weighting by household size had any substantial effect on our results.

Table 4. Determinants of vote overreporting in the American National Election Studies 1978–1990 and 1964 (logistic regression results)

	Elections 1978–1990		Election 1964	
	Model 1	Model 2	Model 3	Model 4
	B (Std.)	B (Std.)	B (Std.)	B (Std.)
<b>Control variables</b>				
Subjective social class <sup>a</sup>				
Upper working	0.10 (0.13)	0.09 (0.13)	—	—
Average middle	0.19 (0.10)	0.19 (0.10)	0.36 (0.25)	0.36 (0.25)
Upper middle	0.73 (0.17)**	0.72 (0.17)**	—	—
Age (years)	0.01 (0.00)**	0.01 (0.00)**	0.01 (0.01)	0.01 (0.01)
Sex (female) <sup>b</sup>	−0.01 (0.08)	−0.01 (0.08)	−0.35 (0.26)	−0.35 (0.26)
Race (white) <sup>c</sup>	−0.28 (0.09)**	−0.28 (0.09)**	0.77 (0.40)	0.77 (0.40)
Index political efficacy	0.41 (0.13)**	0.41 (0.13)**	0.43 (0.29)	0.43 (0.29)
Index candidate knowledge	1.48 (0.26)**	1.49 (0.26)**	—	—
Outcome important? (yes)	0.78 (0.09)**	0.78 (0.09)**	0.39 (0.21)	0.39 (0.21)
Election year <sup>d</sup>				
1978 (N)	0.66 (0.15)**	0.67 (0.15)**	—	—
1980 (P)	0.83 (0.18)**	0.83 (0.19)**	—	—
1984 (P)	0.82 (0.18)**	0.83 (0.18)**	—	—
1986 (N)	0.27 (0.17)	0.28 (0.17)	—	—
1988 (P)	0.71 (0.19)**	0.71 (0.19)**	—	—
<b>Model variables</b>				
Elapsed time (days)	0.01 (0.00)**	0.01 (0.00)*	−0.00 (0.01)	−0.00 (0.01)
Index political involvement	1.49 (0.14)**	1.12 (0.22)**	1.09 (0.39)**	1.26 (0.55)*
Time • Involvement	—	0.02 (0.01)*	—	−0.01 (0.02)
Constant	−3.28 (0.20)**	−3.20 (0.20)**	−2.13 (0.51)**	−2.17 (0.51)**
N	5703	5703	494	494
Pseudo-R <sup>2</sup>	0.13	0.13	0.09	0.09

P = Presidential election; N = Non-presidential election.

Significance: \* $p \leq 0.05$ ; \*\* $p \leq 0.01$ .

Omitted categories: <sup>a</sup>average working; <sup>b</sup>male; <sup>c</sup>non-white; <sup>d</sup>1990 (N); regression controlled for clustering and weighted with household size.

significantly more likely to falsely report to have voted. *Second*, the susceptibility to overreporting increased with the respondents' age. *Third*, white subjects who did in fact not vote were significantly less likely to be found to overreport, compared with non-white respondents. *Fourth*, when respondents had a stronger feeling of political self-efficacy, had higher knowledge about the candidates of the election and cared more about the election outcome, the probability of vote overreporting increased significantly. *Fifth*, the respondents' sex did not prove to be a significant predictor for vote overreporting. *Sixth*, compared with the most recent election in 1990, in all other election years, non-voters were more likely to falsely report to have voted. Except for the contrast with 1986, this difference was always significant. Furthermore and as well in line with the results from other studies, we found significant main effects of our two key variables: Subjects with higher values on the index of political involvement and who were interviewed later during the post-election studies had a significantly higher disposition to overreport their electoral participation. It should be noted that these factors are all determinants of vote overreporting net of the effects of all other variables included in the analysis. In model 2, we added the

interaction variable between political involvement and the time elapsed since the election day in the regression equation (cf. Table 4). The positive and statistically significant regression parameter indicated that a longer time between the election and the survey interview intensified the positive effect of the subjects' political involvement on their probability of vote overreporting.

The regression models 3 and 4, which present the results from the same analysis for the election in 1964, showed a surprisingly different picture (cf. Table 4). *First*, only the effect of respondents' political involvement was completely consistent with the one found for the other election years: It had a significantly positive effect on the susceptibility to vote overreporting. *Second*, for the respondents' age, their self-reported political efficiency, as well as how strongly they cared about the election outcome, we found for the post-election study in 1964 regression parameters of the same sign as for the other election years, but these effects were not statistically significant. This difference may be attributed to the smaller sample size. *Third*, in 1964, the effects of the subjects' race as well as the elapsed time since the election day and the interaction parameter were found to differ from those found for all other elections. The main effects of the respondents' race and the elapsed time were non-significant and had, compared with the other post-election surveys, a sign in the opposite direction. The same is true for the interaction between political involvement and elapsed time: The parameter proved to be insignificant and the sign is inconsistent with the one found for the other election years. Thus, the data from the 1964 election did not only substantially differ with respect to the marginal distributions of the factors included in our analysis from the other elections, but showed substantially different associations between overreporting and its antecedence conditions as well.

In order to shed light on the anomalous results for the data in 1964, we conducted differentiated analyses. We suspected the group of subjects with extremely high political involvement to behave differently in this year. Thus, we split the sample in a large group of less involved (involvement index  $<0.5$ ;  $N = 371$ ) and a small group of highly involved respondents (involvement index  $\geq 0.5$ ;  $N = 125$ ). Due to the resulting lower range of the involvement index, it has been recoded into a binary variable in both subsamples, identifying the respectively less and more involved respondents.

For the less involved subsample, we found results which are consistent with those for all elections between 1978 and 1990 (cf. model 5, Table 5). The statistically significant positive interaction parameter indicated that the effect of political involvement increased when more time has elapsed between the election and the survey interview. The non-significant conditional main effects of time and involvement proved that, when the respective other variable was zero, these factors had no effect on the probability of vote overreporting. The same analysis for the subsample of highly involved respondents indicated that this group was responsible for the failure to replicate the results we found for all other years in 1964 (cf. model 6, Table 5). Here, the interaction parameter between political involvement and elapsed time had a negative sign and was not significant. Furthermore, in this subsample, a longer time since the election day had a significantly *negative* effect on the probability of vote overreporting: Subjects who were interviewed later during the field period were less likely to overreport their electoral participation.

In order to interpret the significant interaction parameters for all post-election surveys between 1979 and 1990 more easily, we computed predicted probabilities for vote overreporting using regression model 2 (cf. Table 4). This was done for all combinations of the respondents' political involvement (high vs. low) on the one hand and the length of time the interview was conducted after the election day on the other (long vs. short). The results

Table 5. Detailed analysis of the determinants of vote overreporting in the American National Election Study in 1964 (logistic regression results)

	Subsample with low political involvement	Subsample with high political involvement
	Model 5	Model 6
	B (Std.)	B (Std.)
Control variables <sup>a</sup>		
Model variables		
Elapsed time (days)	-0.02 (0.01)	-0.03 (0.01)*
Political involvement (high) <sup>b</sup>	-0.44 (0.52)	0.00 (0.82)
Time • Involvement	0.04 (0.02)**	-0.01 (0.03)
Constant	-2.00 (0.58)**	-0.48 (1.07)
<i>N</i>	371	125
Pseudo- <i>R</i> <sup>2</sup>	0.09	0.11

Significance: \* $p \leq 0.05$ ; \*\* $p \leq 0.01$ .

<sup>a</sup>Control variables included: subjective social class, age, sex, race, index political efficacy, outcome important.

<sup>b</sup>Omitted category: low; regression controlled for clustering and weighted with household size.

presented in the upper part of Table 6 *first* showed that the differences in the incentives from social desirability, associated with varying levels of political involvement, had an effect of 0.115 points on the probability of vote overreporting when the survey interview was conducted immediately a day after the election: The probability to overreport their electoral participation was 0.066 for subjects with minimum political involvement and

Table 6. Predicted probabilities of vote overreporting for the interaction between political involvement and elapsed time since the election

Political involvement	Elapsed time		Difference: Long-Short
	Short	Long	
	1978-1990		
Low	0.066	0.125	0.059
High	0.181	0.714	0.533
Difference: High-Low	0.115	0.589	
	1964-Low political involvement		
Low	0.216	0.054	-0.162
High	0.156	0.702	0.546
Difference: High-Low	-0.060	0.648	
	1964-High political involvement		
Low	0.473	0.054	-0.419
High	0.471	0.017	-0.454
Difference: High-Low	-0.002	-0.037	

*Note:* The predicted values are computed for the theoretically possible maximum and minimum of political involvement (values: low = 0, high = 1). For the elapsed time in days, the empirically existing range is used (values: short = 1, long = 95). The continuous control variables 'political efficacy', 'candidate knowledge' and 'age' were fixed at the sample means (1978-1990: efficacy = 0.3; knowledge = 0.1; age = 40.4; 1964: efficacy = 0.5; age = 43.7), whereas for 'sex', 'subjective social class', 'race', 'importance of election outcome' and 'election year', the reference categories were inserted in the regression equation.

increased to 0.181 for subjects with a maximum involvement. *Second*, the same differences in political involvement had a much stronger effect when the interview was conducted on the 95th day after the election, which represents the longest field period found in the surveys included in our study. Here, the probability of vote overreporting was 0.125 under the condition of weak political involvement and increased by 0.589 points to a value of 0.714 for subjects with strong political involvement. From the opposite perspective, looking at the differences in the effect of elapsed time for weak and strong political involvement, we found that the difference in overreporting between the minimum and maximum time period was 0.059 probability points for weakly involved persons, but 0.533 points under the condition of strong involvement. Thus, the effect of a reduced cognitive availability of the participation behaviour in the respective election was more than nine times as strong when the respondents perceived strong rather than weak incentives for socially desirable response behaviour. These results are completely in line with our theoretical expectations.

In Table 6, we furthermore present the predicted probabilities for vote overreporting for the 1964 subsample of less involved (middle part) and the highly involved (lower part) respondents. The results for the former group, based on regression model 5, have shown that, for respondents interviewed directly after the election, an increase in political involvement had a slight and, as indicated by the conditional main effect in model 5, non-significant negative effect on the probability of overreporting. The same was the case for very low involved respondents when the elapsed time since the survey interview increased. However, in the case of highly involved subjects who were interviewed at the last day of the field period, the probability of vote overreporting proved to be 0.702. While the effect of increasing involvement on the probability of vote overreporting was almost zero in early interviews, it increased by 0.648 percentage points at the end of the field period. Similarly, the effect of differences in the elapsed time increased from being absent for low involved respondents to 0.546 percentage points in the group of subjects with high involvement. Although only half of the possible range of the involvement index has been utilised in this analysis, the differences in predicted probabilities are very similar to those found for the full index range in the ANES studies between 1978 and 1990. Thus, for three fourths of the respondents in 1964, the results are completely consistent with our theoretical hypothesis as well.

The lower part of Table 6 presents the predicted probabilities for vote overreporting in the one-third subsample of respondents with the highest level of political involvement in 1964. The results showed *first* that for these respondents, a further increase in involvement had no effect on their probability of vote overreporting, no matter when the interview took place. *Second*, independent from political involvement, vote overreporting was strongest on the day after the election and strongly *decreased* with every additionally elapsed day.

In the final part of our analysis, we tested for the alternative interpretation of our results as being the consequence of faulty external source monitoring. As mentioned earlier, it is expected from this theoretical view that an interaction effect between the frequency at which subjects voted in elections in the past and the elapsed time explains the probability of vote overreporting. Thus, we computed for the presidential elections in 1980 and the subsample of low involved respondents in 1964, where the data was available, multiplicative terms between the vote-frequency dummies and the time variable. If source monitoring and not social desirability is the mechanism which caused the observed effects, the interaction between political involvement and elapsed time should lose its explanatory power. The regression results presented in Table 7 proved that this was not the



Table 7. Determinants of vote overreporting in the American National Election Studies under control of indicators for source monitoring (logistic regression results)

	Election 1964	Election 1980
	Model 7	Model 8
	B (Std.)	B (Std.)
Control variables <sup>a</sup>		
Source monitoring		
Frequency voted in past elections <sup>b</sup>		
Some	3.98 (1.16)**	1.01 (0.72)
Most	3.05 (1.32)*	2.45 (0.65)**
All	4.26 (1.15)**	3.48 (0.66)**
Frequency • Time		
Some • Time	-0.07 (0.03)**	-0.01 (0.03)
Most • Time	-0.02 (0.03)	0.01 (0.03)
All • Time	-0.03 (0.02)	-0.03 (0.03)
Model variables		
Elapsed time (days)	0.01 (0.02)	-0.00 (0.02)
Index political involvement	-0.84 (0.66)	0.46 (0.78)
Time • Involvement	0.05 (0.02)**	0.08 (0.03)*
Constant	-3.77 (1.24)**	-3.48 (0.66)**
<i>N</i>	371	553
Pseudo- <i>R</i> <sup>2</sup>	0.22	0.29

Significance: \* $p \leq 0.05$ ; \*\* $p \leq 0.01$ .

<sup>a</sup>Control variables included: subjective social class, age, sex, race, index political efficacy, outcome important, index candidate knowledge (only 1980).

<sup>b</sup>Omitted category: none; regression controlled for clustering and weighted with household size.

case in the years 1964 and 1980: The interaction parameters for both elections remained essentially unaltered, and even slightly increased in size. The effects expected in the source-monitoring framework were only partly confirmed. What is consistent with this theory is that more frequent voting in elections in the past leads to a significantly higher probability of vote overreporting: The parameters for the frequency dummies were all positive. However, the predicted interaction effect only proved to be significant for the election in 1964, and the resulting parameter has the wrong sign: This effect indicated that the probability of overreporting for subjects who voted sometimes in the past is substantially reduced when more time has elapsed between the election and the survey interview.

## SUMMARY AND DISCUSSION

Previous research has shown two factors to be important predictors for the respondents' susceptibility to overreport their participation in political elections: Respondents who are politically more involved and were interviewed longer after the election day were found to be more likely to falsely report to have voted. In the present paper, we examined the hypothesis that the respondents' political involvement, as a proxy variable for how socially desirable voting is perceived, and the time elapsed since the election day, as a determinant for the cognitive availability of whether subjects voted in a particular election, are

*interdependent* determinants for overreporting. Our empirical analysis *first* replicated the already documented effects of different sociodemographic characteristics and political attitudes. It has also been shown that the respondents' political involvement and the time elapsed since the election day both have significant net effects on the susceptibility to overreport voting. *Second*, and consistent with our theoretical hypothesis, we found that the positive effect of political involvement on overreporting is significantly stronger when more time has elapsed since the election day. Accordingly, the accuracy motivation associated with a strong conviction about what represents the correct answer is increasingly less capable of counterbalancing incentives from social desirability when a longer time since the encoding of the behavioural episode increasingly extinguishes this information from memory.

The aforementioned results were found for all six ANES post-election studies conducted after the presidential and non-presidential elections in the period between 1978 and 1990. However, the expected interaction effect was not found for the post-election survey in 1964. Differentiated analyses for this year revealed substantial differences in how the subsamples of respondents with high and low political involvement behaved: For the three-quarter least involved respondents, we found exactly the same theoretically predicted interaction effect that has been observed in the case of all other elections. However, the one fourth of respondents with the highest involvement in the sample did not conform with any of our expectations: In this group, a further increase of involvement did not make overreporting more likely, being interviewed longer after the election decreased the respondents' likelihood to wrongly report to have voted, and the interaction effect between both factors proved to have no explanatory power.

The political situation around the election in 1964 was, because of the escalation of the Vietnam conflict and the climax of the civil rights movement, historically very exceptional, and led to a high degree of political mobilisation of the electorate. This may have caused the anomalous response behaviour of the highly involved subsample in 1964 in different ways. *First*, these circumstances may have made norms of civic duty for politically involved respondents situationally so salient, that a further increase in political involvement had no additional effect. *Second*, the upcoming Vietnam War may have boosted feelings of patriotism in the group of highly involved respondents. This could have overridden impression-management concerns of respondents interviewed late during the post-election survey. *Third*, due to the extremely long period between the election and the end of the validation procedure, one could suspect the resulting validation data to be of less than average quality.

From our theoretical perspective, the observed interaction between elapsed time and involvement results from social desirability. However, two alternative explanations are possible. *First*, the effects could be due to unreliable validation data. Accordingly, a revalidation of the ANES data from 1988 showed that for 13.7 per cent of the respondents, the initial validation results could not be confirmed (Traugott, Traugott, & Presser, 1992). This may result from mistakes during the validation procedure or from the poor quality of record keeping and might lead to wrong conclusions about vote overreporting. In particular, the quality of validation data was found to be especially poor in specific geographical areas, where certain groups of respondents were overrepresented (Presser, Traugott, & Traugott, 1990). This was the case for black as well as for metropolitan respondents and those living in the south of the US. For these groups, the overreporting probability may be over- or underestimated as an artefact of poor validation data. No direct evidence is available for whether politically involved respondents and those interviewed

later during the field periods are disproportionately affected by validation error, which in turn could explain their exceptional overreporting rates. For black respondents, however, it has been shown that being more likely to live where data quality is poor does not explain their often documented stronger susceptibility to overreporting (Abramson & Claggett, 1992). Hence, we regard it as unlikely that our results are simply an artefact of systematic differences in validation error between the analysed groups of respondents.

The *second* alternative explanation is provided within the source-monitoring framework and is explicitly tested in our study. Here, it is assumed that a higher political involvement is associated with more frequent thoughts about voting as well as with more frequent voting in the past, both of which provide more opportunities to confuse the resulting memory characteristics with remembering to have voted in the election under consideration. It is furthermore predicted that both correlates of political involvement have a stronger positive effect on overreporting when longer time is elapsed since the target election. This hypothesis has been tested for the frequency of having voted in the past. We found for the elections in 1964 and 1980, where the necessary data were available, that the probability of overreporting indeed increased in both ANES studies with the lifetime frequency of the respondents' electoral participation. However, the strength of this effect did not vary with the elapsed time in the expected way. What is important for the interpretation of our results, statistically controlling for this aspect of source monitoring did not affect the previously found interaction effect between political involvement and elapsed time. Although we were not able to operationalise the determinants of faulty source monitoring completely, these results provide evidence for our assumption that not source monitoring but rather SD bias is the mechanism underlying this effect.

From a practical point of view, our results suggest that a longer field period of post-election studies does not only, as already known, increase vote overreporting, but that the strength of this effect differs for certain groups of respondents. Accordingly, subjects with a higher political involvement are much more strongly affected, compared to those who are less involved. Thus, the later interviews are conducted in the field period, the more are differences in the self-reported electoral participation according to political involvement an artefact of differences in vote overreporting. Hence, the observation that political involvement is more strongly correlated with self-reported rather than with validated voting behaviour may particularly result from interviews which were conducted late in the field period (Bernstein et al., 2001; Cassel, 2003). Not only does late interviewing have a direct negative effect on the data quality of election surveys, but it intensifies the detrimental effect of political involvement as well. Our results thus offer an additional argument for conducting post-election surveys as soon as possible after the election day.

Although our study shows for the first time the interdependence between two major determinants of vote overreporting, it leaves questions unanswered. To begin with, we are not able to present direct empirical evidence for the assumption that more political involvement leads respondents to perceive voting to be more socially desirable, and by this mechanism to increase incentives for socially desirable responding. For other questionnaire topics, for instance for racial attitude answers, this has been done, and substantial differences between groups of respondents have been found (Stocké, 2004b). Another open question is whether the social desirability effect associated with the subjects' political involvement is the consequence of impression management-driven other-deception or whether it results from the respondents' tendency for self-deceptive enhancement (cf. Paulhus, 2002). In the first case, the presence of others, their ability to perceive and evaluate the response behaviour is an essential precondition for SD bias.

Under private response conditions, SD bias can only be expected in the form of 'self-deception'. The interviews in the ANES studies were, however, all conducted interviewer-administered, and thus, both forms of SD-effects are possible sources of vote overreporting. In order to decide about the nature of SD bias, it would be necessary to conduct a split-ballot study, in which the privacy of the response situation is experimentally varied, and so, SD-effects due to impression management and 'self-deception' can be separated.

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## APPENDIX

Table A1. Principal-component factor analysis with tetrachoric correlations of the involvement indicators

Election year	Factor loadings			Eigenvalue 1st factor
	Strength of party identification	Interest in election campaign	Interest in public affairs	
1964 (P)	0.70	0.86	0.79	1.86
1978 (N)	0.69	0.91	0.80	1.94
1980 (P)	0.74	0.84	0.85	1.99
1984 (P)	0.69	0.92	0.74	1.87
1986 (N)	0.70	0.84	0.88	1.96
1988 (P)	0.67	0.85	0.76	1.73
1990 (N)	0.64	0.90	0.86	1.96
Total	0.69	0.87	0.82	1.92

P = Presidential election; N = Non-presidential election.