

Is There a Secret Ballot? Ballot Secrecy Perceptions and Their Implications for Voting Behaviour

ALAN S. GERBER, GREGORY A. HUBER, DAVID DOHERTY AND CONOR M. DOWLING*

Do people believe the votes they cast are truly secret? Novel items added to a nationally representative survey show that 25 per cent of respondents report not believing their ballot choices are kept secret and over 70 per cent report sharing their vote choices with others. These findings suggest that standard models of candidate choice should account for the potential effects of doubts about ballot secrecy. Consistent with this view, regression analysis shows that social forces appear to have a greater effect on vote choices among people who doubt the formal secrecy of the ballot. This analysis supports the broader claim that the intended benefits of institutional rules may not be realized if people's perceptions of these rules differ from their formal characteristics.

The secret ballot was introduced in the Roman assemblies in the second century as a way of 'lessening the control of the upper classes over the electorate, and enhancing the voters' effective freedom of choice'.¹ Reformers cited a similar rationale in pushing for the adoption of the secret ballot in the United States in the second half of the nineteenth century, hoping a secret ballot would reduce bribery and coercion by employers and party officials.² Ballot secrecy is now a common and unquestioned component of virtually all legitimate democratic contests. Indeed, Article 25 of the United Nations' *Civil and Political Covenant* lists the secret ballot as a crucial component of a fair electoral process.³

In the United States the secret ballot is well established, having been in place for over a century.⁴ Even if the formal process of voting is in fact perfectly secret, however, it does

* Gerber and Huber at Department of Political Science and Institution for Social and Policy Studies, Yale University; Doherty at Department of Political Science, Loyola University Chicago; Dowling at Department of Political Science, University of Mississippi (email: alan.gerber@yale.edu). This research was funded by Yale's Center for the Study of American Politics and Institution for Social and Policy Studies. Data and supporting materials necessary to reproduce the numerical results will be made available at <http://huber.research.yale.edu/> upon publication. An earlier version of this article was presented at the 2009 meeting of the American Political Science Association. We thank Kevin Arceneaux, John Bullock, Rachel Vanessa Cobb, Jamie Druckman, Susan Hyde, Gabriel Lenz, Neil Malhotra, Marc Meredith, Eric Patashnik, Eric Schickler, the anonymous referees and the Editor for feedback on earlier versions. An appendix containing additional information is available online at: <http://dx.doi.org/10.1017/S000712341200021X>.

¹ Alexander Yakobson, 'Secret Ballot and Its Effects in the Late Roman Republic', *Hermes*, 123 (1995), 426–42, p. 426.

² Eldon Cobb Evans, *A History of the Australian Ballot System in the United States* (Chicago: University of Chicago Press, 1917).

³ Thomas M. Franck, 'The Emerging Right to Democratic Governance', *American Journal of International Law*, 86 (1992), 46–91, p. 64.

⁴ For example, Lawrence E. Benson, 'Studies in Secret-Ballot Technique', *Public Opinion Quarterly*, 5 (1941), 79–82; Evans, *A History of the Australian Ballot System in the United States*; Alan S. Gerber,

not necessarily follow that the voting decision should be understood as a secret, private act. Whatever the truth is regarding *actual* ballot secrecy, what is crucial for understanding political behaviour is whether people *think* their voting decisions are secret. Indeed, when weighed against the vanishingly small chance of casting a ballot that decides an election, if a citizen believes that there is even a very slight chance of his or her choices being disclosed and that this disclosure may have personal repercussions, concerns about secrecy can affect his or her voting behaviour in a way that easily overwhelms his or her own preferences over which candidate should hold office.

We distinguish two forms of ballot secrecy. First, the ballot is *psychologically secret* when the voter believes that election administration is such that her ballot choices are secret. Strong formal protections notwithstanding, if people do not believe that the confidentiality of their choices is well protected, either because they are ill informed about the voting process⁵ or because they do not believe the institution works properly,⁶ the potential benefits of the secret ballot are undermined. Consequently, choices in the voting booth may reflect not just personal preferences, but also fears about going against the wishes of people who may learn of one's vote choices. Thus, in contrast to the formal legal secrecy protections that may be in place, we refer to whether people *believe* that their choices are held secret as the *psychological secrecy* of the ballot.⁷

Secondly, social factors play an important role in the functional secrecy of the ballot. Presidential elections are national events that create conditions where people may feel socially obligated to discuss their vote choices with others. Anticipation of the possibility that one will be expected to reveal one's vote to others may cast a shadow over choices made in the voting booth, opening these choices to the influence of social pressures.

(*Fnote continued*)

'The Adoption of the Secret Ballot' (doctoral dissertation, Massachusetts Institute of Technology, 1994); Jerrold G. Rusk, 'The Effect of the Australian Ballot Reform on Split Ticket Voting: 1876–1908', *American Political Science Review*, 64 (1970), 1220–38. On the voting process in the United States prior to the institution of the secret ballot, see, for example, Richard F. Bense, *The American Ballot Box in the Mid-nineteenth Century* (New York: Cambridge University Press, 2004).

⁵ Michael X. Delli Carpini and Scott Keeter, *What Americans Know about Politics and Why it Matters* (New Haven, Conn.: Yale University Press, 1996).

⁶ R. Michael Alvarez, Thad E. Hall and Morgan H. Llewellyn, 'Are Americans Confident Their Ballots Are Counted?' *Journal of Politics*, 70 (2008), 754–66; Lonna Rae Atkeson and Kyle L. Saunders, 'Voter Confidence: A Local Matter?' *PS: Political Science & Politics*, 40 (2007), 655–60; Charles S. Bullock III, M.V. Hood III and Richard Clark, 'Punch Cards, Jim Crow, and Al Gore: Explaining Voter Trust in the Electoral System in Georgia, 2000', *State Politics and Policy Quarterly*, 5 (2005), 283–94; Morgan H. Llewellyn, Thad E. Hall and R. Michael Alvarez, 'Electoral Context and Voter Confidence: How the Context of an Election Shapes Voter Confidence in the Process' (unpublished, Caltech/MIT Voting Technology Project, Working Paper No: 79, 2009).

⁷ Previous work has examined the sources of voter confidence in the electoral process. For example, scholars have examined how institutional factors, such as voting technology, affect beliefs about whether or not one's vote will be counted properly (e.g., Alvarez, Hall and Llewellyn, 'Are Americans Confident Their Ballots Are Counted?'; Atkeson and Saunders, 'Voter Confidence'; Bullock, Hood and Clark, 'Punch Cards, Jim Crow, and Al Gore'; Llewellyn, Hall and Alvarez, 'Electoral Context and Voter Confidence'). Others find that people's interactions with election workers, as well as their sense of privacy while voting, can affect both evaluations of the voting experience and confidence in the electoral process as a whole (see Ryan L. Claassen, David B. Magleby, J. Quin Monson and Kelly D. Patterson, "'At Your Service": Voter Evaluations of Poll Worker Performance', *American Politics Research*, 36 (2008), 612–34). However, we know of no research that examines how privacy or secrecy affects vote choice or turnout decisions.

Of course, revealing one's vote choice is not compulsory, but in an environment where there is a norm of sharing political views, the freedom to refuse to discuss one's vote may be pointless – failing to disclose your vote may effectively reveal it. Similarly, lying about one's choice or refusing to participate openly in a conversation about the election are always options, but individuals typically experience discomfort when lying or keeping secrets. In situations where that discomfort is anticipated, voting the 'right' way is perhaps the easiest way to avoid having to be secretive or deceptive.⁸

It is important to emphasize that our main focus is on the consequences of beliefs regarding ballot secrecy, and that we are not claiming that all discussions about one's vote choice constitute threats to the normative standard of ballot secrecy. Furthermore, some anticipated interactions will not alter behaviour. For example, expectations that one's vote will be revealed to like-minded individuals are unlikely to prompt people to change their choices. Similarly, some people may lie about their vote choices without discomfort and can, therefore, avoid the social consequences of their true choices.⁹ However, in cases where people feel obligated to discuss their choices with those they disagree with, they may change their choices to avoid conflict, rather than vote for the candidate whom they would otherwise prefer. We refer to individuals' beliefs about whether they will reveal their choices to others as the *social secrecy* of the ballot.

In this study we report evidence from three data sources. The first and primary data source is a nationally representative internet survey fielded in the fall of 2008 by YouGov/Polimetrix. We asked a series of questions which measure respondents' perceptions about the extent to which voting administrators keep their vote choices confidential and whether respondents share their voting decisions with others, in particular close friends and family members. These data are supplemented with shorter surveys from a random digit dial (RDD) sample of Michigan registered voters conducted in the spring of 2005 and a nationally representative RDD telephone survey conducted by Princeton Survey Research in the fall of 2010.

Our analysis makes two important contributions to our understanding of ballot secrecy. First, we measure the psychological and social secrecy of the ballot. Our results show that while the formal voting process in the United States is premised on a secret ballot, many people (25 per cent of our sample in our primary data source) do not believe that their ballots are kept secret. Furthermore, the vast majority of respondents (about 73 per cent) report sharing their vote choices with close friends or family members 'most'

⁸ Relevant research in psychology includes evidence that individuals find social interactions involving lying less pleasant (see Bella M. DePaulo, Deborah A. Kashy, Susan E. Kirkendol, Melissa M. Wyer and Jennifer A. Epstein, 'Lying in Everyday Life', *Journal of Personality and Social Psychology*, 70 (1996), 979–95) and that such discomfort increases and lies are told less frequently with individuals one is closer to (see Bella M. DePaulo and Deborah A. Kashy, 'Everyday Lies in Close and Casual Relationships', *Interpersonal Relations and Group Processes*, 74 (1998), 63–79). Additionally, experimental research has shown that those who lie or keep secrets are viewed less favourably (see Caroline C. Rycyna, Crystal D. Champion and Anita E. Kelly, 'First Impressions after Various Types of Deception: Less Favorable Following Expectancy Violation', *Basic and Applied Social Psychology*, 31 (2009), 40–8) and that even keeping secrets can make individuals feel uncomfortable (see Julie D. Lane and Daniel M. Wegner, 'The Cognitive Consequences of Secrecy', *Journal of Personality and Social Psychology*, 69 (1995), 237–53).

⁹ Even if people do lie, however, there is strong evidence that they believe their lies are more easily detectable than they actually are; this 'illusion of transparency' is well documented in psychology (see, for example, Thomas Gilovich, Victoria Husted Medvec and Kenneth Savitsky, 'The Illusion of Transparency: Biased Assessments of Others' Ability to Read One's Emotional States', *Journal of Personality and Social Psychology*, 75 (1998), 332–46).

or ‘all of the time’ – substantially more than the 10 per cent of people in recent years who report sharing their vote preferences by wearing a button or displaying a bumper sticker.¹⁰ Overall, over 80 per cent of the population believes that either someone will learn of their choices without their permission or that they will reveal them, suggesting that the highest level of ballot secrecy is confined to a relatively small proportion of the population. Far from casting private, secret ballots, most voters cast ballots either believing that their choices may be shared without their consent or knowing that they will reveal their choices to others either voluntarily or out of a sense of social obligation.

Secondly, we examine the implications of social and psychological secrecy for individual political behaviour by analysing the relationships between these concepts and vote choice. This initial analysis suggests that beliefs about ballot secrecy affect voting decisions. We find that those in union households who are concerned that their ballot choices are not formally well protected (low psychological secrecy) were substantially less likely to vote for the Republican presidential candidate in 2008 than union members who thought their choices were protected. We also find evidence that ‘weak’ partisan identifiers who anticipate sharing their choices with others (low social secrecy) were less likely to deviate from their party’s nominee when voting than weak partisans who thought they would keep their choices private.

Our findings have broader implications for understanding the nature of mass behaviour both within and outside of the United States. Perhaps our most important contribution is to highlight the importance of distinguishing between formal/informal institutions¹¹ and people’s perceptions of how those institutions truly operate. In the case of ballot secrecy, the effects of the formal system of election rules and administrative practices depend crucially on whether individuals *believe* that their choices are psychologically and/or socially secret.¹² Our emphasis on the perceptions and beliefs of the political actor (here, the voter) is in contrast to the common practice of analysing the behavioural effects of institutional features by proceeding directly from the formal characteristics of a set of rules to a calculation of how the rules as written affect individual incentives. A more accurate account of the effect of institutions on choice would add an additional stage whereby the formal properties first alter the individual’s beliefs about the consequences of various choices. It is then the change in beliefs induced by the rule change, rather than the change in the rules themselves, which affects choice behaviour.

Secondly, our findings contribute to a growing resurgence in understanding individual political behaviour as a social act.¹³ Although scholars across the social sciences have long

¹⁰ Source: American National Election Studies (ANES) cumulative file (1992–2004).

¹¹ See, for example, Jack Knight, *Institutions and Social Conflict* (Cambridge: Cambridge University Press, 1992); Douglass North, *Institutions, Institutional Change and Economic Performance* (New York: Cambridge University Press, 1990).

¹² See, for example, Schaffer’s discussion of elite concerns that secret balloting would undercut social-pressure effects on voting. Schaffer also presents evidence that individuals continue to feel social pressures even when secret balloting is employed (Frederic C. Schaffer, *Democracy in Translation: Understanding Politics in an Unfamiliar Culture* (Ithaca, NY: Cornell University Press, 1998)).

¹³ For example, Nicholas A. Christakis and James H. Fowler, *Connected: The Surprising Power of Our Social Networks and How They Shape Our Lives* (Boston, Mass.: Little, Brown, 2009); Christopher T. Dawes, Peter John Loewen and James H. Fowler, ‘Social Preferences and Political Participation’, *Journal of Politics*, forthcoming; Diana C. Mutz, *Hearing the Other Side: Deliberative versus Participatory Democracy* (Cambridge: Cambridge University Press, 2006); Robert Huckfeldt and John Sprague, ‘Networks in Context: The Social Flow of Political Information’, *American Political Science Review*, 81 (1987), 1197–215.

highlighted the influence of social pressures and expectations¹⁴ and power relations¹⁵ on individual decisions, ballot secrecy is often thought to be a remedy for these peer and hierarchical pressures. We identify an important reason for the persistence of both peer relations and power relations – individual-level differences in perceptions of operative ballot secrecy.

Thirdly, demonstrating that individuals reveal their decisions, even those as private as voting decisions, provides a micro-level explanation for the persistent power of group affiliations on a broad range of behaviours and attitudes.¹⁶ Our analysis suggests that individuals do not anticipate keeping their opinions to themselves, which may enhance group homogeneity by discouraging deviations that will subsequently be made public. Such homogeneity also has implications for understanding the relative importance of efforts to ‘buy’ turnout or persuade voters in models of campaign resource allocation by affecting the ability of groups to promise credibly to deliver blocks of votes.¹⁷

The remainder of the article proceeds as follows. In the next section we consider how the psychological and social secrecy of the ballot can affect the costs and benefits of voting for particular candidates and propose a model of how lack of secrecy may affect vote choices. Then we describe our data sources and summarize our findings regarding public perceptions of ballot secrecy. Next, we present analysis that tests our model of how secrecy perceptions affect vote choice. Finally, we discuss the implications of our findings as well as the methodological limitations of our analysis. We also suggest several directions for future research.

BALLOT SECRECY AND VOTING DECISIONS

There is little evidence that the formal secrecy of the ballot is not maintained in the contemporary United States. One possibility, therefore, is that only a small percentage of the population believes that choices in the voting booth are anything other than confidential. However, little scholarly work has examined beliefs about the extent and consequences of psychological secrecy empirically.¹⁸ Similarly, little is known about the degree to which individuals anticipate sharing their vote choices with others and whether

¹⁴ For example, Solomon E. Asch, ‘Opinions and Social Pressure’, *Scientific American*, 193 (1955), 31–5; Bernard R. Berelson, Paul F. Lazarsfeld and William N. McPhee, *Voting: A Study of Opinion Formation in a Presidential Campaign* (Chicago: University of Chicago Press, 1954); Robert B. Cialdini and Noah J. Goldstein, ‘Social Influence: Compliance and Conformity’, *Annual Review of Psychology*, 55 (2004), 591–621; Alan S. Gerber, Donald P. Green and Christopher W. Larimer, ‘Social Pressure and Voter Turnout: Evidence from a Large-Scale Field Experiment’, *American Political Science Review*, 102 (2008), 33–48; Richard T. Santee and Christina Maslach, ‘To Agree or Not to Agree: Personal Dissent amid Social Pressure to Conform’, *Journal of Personality and Social Psychology*, 42 (1982), 690–700.

¹⁵ Stanley Milgram, ‘Behavioral Study of Obedience’, *Journal of Abnormal and Social Psychology*, 67 (1963), 371–8.

¹⁶ For example, Dennis Chong, *Rational Lives: Norms and Values in Politics and Society* (Chicago: University of Chicago Press, 2000); Herbert McClosky and Harold E. Dahlgren, ‘Primary Group Influence on Party Loyalty’, *American Political Science Review*, 53 (1959), 757–76.

¹⁷ For example, Simeon Nichter, ‘Vote Buying or Turnout Buying? Machine Politics and the Secret Ballot’, *American Political Science Review*, 102 (2008), 19–31; Susan C. Stokes, ‘Perverse Accountability: A Formal Model of Machine Politics with Evidence from Argentina’, *American Political Science Review*, 99 (2005), 315–25.

¹⁸ In their study of what factors affect people’s evaluations of their polling place experiences, Claassen, Magleby, Monson and Patterson, ‘“At Your Service”’, find that perceptions that one’s voting experience was private are associated with positive evaluations of poll workers.

this affects the decisions they make. Overall, we lack clear evidence regarding whether the population has faith in the formal and social secrecy of the voting process, and what types of people are most likely to have doubts about formal ballot secrecy (psychological secrecy) or their ability to avoid revealing their choices to others (social secrecy).

As we noted above, the findings from our surveys (described in greater detail below) suggest that doubts about formal ballot secrecy are quite prevalent (i.e., many people lack a sense of psychological secrecy) and that most individuals report sharing their candidate choices with close friends and family members (i.e., most people lack social secrecy). Given this, we consider how perceived threats to ballot secrecy may affect voting decisions by adjusting the standard basic expected utility model of candidate choice. Following Downs,¹⁹ the expected reward, R , from voting for Candidate 1 rather than Candidate 2 equals:

$$R = p_p(B_1 - B_2), \quad (1)$$

where p_p is the probability the voter's ballot is *pivotal* and B_i is the voter's utility when Candidate i wins. Whether or not the utility level B_1 or B_2 is realized depends on the outcome of the election, rather than the act of casting the ballot. The voter's rule is to vote for Candidate 1 if $R > 0$. A key feature of this model is that the sole motivation for vote choice is to affect the election result, even though the probability the voter's ballot is pivotal, p , is essentially zero in all but the most trivial elections.²⁰

We extend the Downsian framework to the case where the voter's choice may be observed by others by expanding the expected utility calculation to include the possible economic and social rewards from voting for a particular candidate regardless of whether he or she wins the election. For those citizens who believe that their vote choice is not secret, we account for these additional returns by writing the expected utility of voting for Candidate 1 versus Candidate 2 as:

$$R = p_p(B_1 - B_2) + p_r(X_1 - X_2), \quad (2)$$

where X_i corresponds to the additional (net) rewards (economic or social) associated with voting for Candidate i if the vote choice is made known, which occurs with probability p_r (the r subscript is for *revealed*). Social costs and benefits may include positive feelings of solidarity or, conversely, the social discomfort and sanctions that accompany disagreeing with friends. Economic costs and benefits may include being passed over for a promotion, being assigned to undesirable shifts, or other workplace punishments.

The probability a vote is pivotal, p_p , is a function of how evenly divided voter preferences are and the size of the electorate. Tie votes are empirically very rare and estimates for the odds a vote is pivotal are extremely low.²¹ If p_p is near zero and p_r is not,

¹⁹ Anthony Downs, *An Economic Theory of Democracy* (New York: Harper & Row, 1957).

²⁰ See, for example, William H. Riker and Peter C. Ordeshook, 'A Theory of the Calculus of Voting', *American Political Science Review*, 62 (1968), 25–42; John P. Katosh and Michael W. Traugott, 'Costs and Values in the Calculus of Voting', *American Journal of Political Science*, 26 (1982), 361–76. When there is incomplete information about the candidates, then vote choice may be a more complicated function of, among other things, the voter's private knowledge and the distribution of preferences and information among the electorate of which the voter is a part. See, for example, Timothy J. Feddersen and Wolfgang Pesendorfer, 'The Swing Voter's Curse', *American Economic Review*, 86 (1996), 408–24.

²¹ Casey B. Mulligan and Charles G. Hunter, 'The Empirical Frequency of a Pivotal Vote', *Public Choice*, 116 (2003), 31–54. We emphasize the importance of perceptions of ballot secrecy rather than actual ballot secrecy. There may also be differences between the actual probability that a voter is pivotal and voters' perceptions about this probability. However, survey evidence shows people have a fairly

then the vote choice decision rule can be approximated by the rule: vote for Candidate 1 if $(X_1 - X_2) > 0$. For this reason, only the ‘social’ or ‘economic’ consequences of the vote choice matter to citizens for whom p_r is anything other than as vanishingly small as p_p .

Some earlier studies have noted that ballot secrecy may have an important effect on voting behaviour by freeing voters from fears of retaliation. For example, Rusk finds that the introduction of the Australian ballot was associated with an increase in split-ticket voting and argues that this was, at least in part, because secret voting made voters more comfortable with expressing cross-party preferences without fear of reprisals from party leaders.²² Riker and Ordeshook use the example of a farm labourer who votes for a candidate opposed by his employer, noting that without a secret ballot, his vote might entail additional costs in the form of reprisals from the employer.²³

As we noted earlier, one rationale for the adoption of the secret ballot was to remove some of the social costs associated with citizens’ choices. We expect people who are confident that their choices are private (p_r is small) will be willing to cast ballots that stray from the preferences of others who could conceivably reward or punish them if they learned about their choices. However, if a voter anticipates being asked about and revealing his or her choices in social situations or has doubts about whether election administrators effectively ensure the secrecy of the ballot, the formal secrecy of the ballot may be irrelevant. For this reason, we expect that people who believe that either of these types of revelations are likely to occur will be less willing to ‘break ranks’ and make choices that conflict with the choices made by their friends, family, employers and others.

PUBLIC PERCEPTIONS OF BALLOT SECRECY

We designed a battery of questions to empirically measure respondents’ psychological secrecy (i.e., perceptions about the extent to which voting administrators keep choices confidential) and social secrecy (i.e., whether respondents share their voting decisions with others). In the next section we test our revised model of candidate choice empirically. Prior to doing so, in this section we describe the questions we asked and the distribution of responses to them among the population.

The data for our primary analysis are drawn from the 2008 Cooperative Congressional Election Study (CCES). The CCES is an internet-based survey fielded by YouGov/Polimetrix that uses a combination of sampling and matching techniques to account for the fact that opt-in internet survey respondents may differ from the general population on factors such as political interest. This process is designed to approximate an RDD sample.²⁴ All of the analysis using these data employs the analytical weights provided with

(Footnote continued)

accurate sense of the likelihood their vote will change the outcome of an election. See André Blais, *To Vote or Not To Vote? The Merits and Limits of Rational Choice Theory* (Pittsburgh: University of Pittsburgh Press, 2000). Moreover, the argument in the text is not altered if the typical voter thinks the odds of changing the presidential election result is, say, 1/10,000 rather than 1/10,000,000.

²² Rusk, ‘The Effect of the Australian Ballot Reform on Split Ticket Voting’.

²³ Riker and Ordeshook, ‘A Theory of the Calculus of Voting’, p. 27.

²⁴ The survey sample we use was constructed by first drawing a target population sample of 1,800 individuals. This sample is based on the 2005–06 American Community Study, November 2008 Current Population Survey, and the 2007 Pew Religious Life Survey. Thus, this target sample is representative of the general population on a broad range of characteristics including a variety of geographic (state, region and metropolitan statistical area), demographic (age, race, income, education and gender), and other

TABLE 1 *Psychological and Social Secrecy Question Wording, Scoring and Marginal Responses*

Question label: Question wording (CCES)*	Response (scoring)	Total % (CCES)	Total % (MI)	Total % (PSR)
<i>Psychological secrecy</i>				
<i>Choices secret?</i> As far as you know, when you go to a polling place and vote, are your choices about which candidate you voted for kept secret unless you tell someone, or are your choices not kept secret?	Not kept secret (0) Kept secret (1)	25.5 74.5	19.4 80.6	27.3 72.7
<i>Difficult to find out?</i> According to the law, which candidate you vote for is supposed to be kept secret unless you tell someone. Even so, how difficult do you think it would be for politicians, union officials, or the people you work for to find out who you voted for, even if you told no one?	Not difficult at all (1) Not too difficult (2) Somewhat difficult (3) Too difficult (4) Impossible (5)	11.2 29.2 21.4 25.6 12.6	12.9 24.2 26.4 24.3 12.1	18.4 23.0 24.9 21.8 11.9
<i>Anyone ever find out?</i> Do you think a politician, union official, or someone you work for has ever found out who you voted for because you were being watched when you voted, because there is some way to match you up with your ballot, or because of some other way around the secret ballot?	Yes (0) No (1)	11.3 88.7	22.7 77.3	N/A N/A
<i>Find out often?</i> How often do you think someone like a politician, union official, or someone you work for finds out who you voted for because you were being watched when you voted, because there is some way to match you up with your ballot, or because of some other way around the secret ballot? (<i>only if 'Yes' above</i>)	Always (1) Most elections (2) Some elections (3) Rarely (4) Never (5)	7.0 37.0 37.6 16.9 1.4	15.1 22.7 38.1 21.1 3.1	N/A N/A
<i>Social secrecy</i>				
<i>Mention vote?</i> Either before or after an important election, do you mention which candidate you prefer or voted for to at least one other person—for instance a close friend or family member?	Almost all the time (1) Most of the time (2) Sometimes (3) Rarely (4) Never or almost never (5)	48.8 23.8 16.3 6.1 4.9	N/A	N/A

TABLE 1 (Continued)

<i>People ask about vote?</i> Does anyone, including close friends or family members, ever ask you which candidate you prefer or voted for?	Almost all the time (1)	29.9	
	Most of the time (2)	23.1	
	Sometimes (3)	34.6	N/A
	Rarely (4)	7.6	N/A
	Never or almost never (5)	4.8	
<i>Name a candidate?</i> If a close friend or family member asks you who you prefer in an election, do you name a candidate?	Almost all the time (1)	56.9	
	Most of the time (2)	20.3	
	Sometimes (3)	14.6	N/A
	Rarely (4)	3.0	
	Never or almost never (5)	5.2	
<i>Tell truth about preference?</i> If you tell a close friend or family member which candidate you prefer, do you tell the truth?	Almost all the time (1)	84.4	
	Most of the time (2)	9.8	
	Sometimes (3)	2.8	N/A
	Rarely (4)	20	
	Never or almost never (5)	0.9	
<i>Truth when disagree?</i> Suppose you knew that a close friend prefers a different candidate than you prefer. If your friend asked you about which candidate you preferred, what would you do?	Tell them which cand. (-1)	88.8	
	Change the subject (0)	9.3	
	Not tell the truth (1)	1.8	N/A
<i>Could keep secret?</i> Suppose you wanted to keep which candidate you voted for a secret from your close friends. Do you think you could keep them from finding out or would you eventually say something that allowed them to figure out who you voted for?	They would figure it out (0)	47.7	
	Could keep it secret (1)	53.3	N/A

Note: N/A = Not asked. All responses are weighted. 2008 CCES (Cooperative Congressional Election Study, Internet national sample), N = 804. 2005 MI (Michigan Study, RDD of MI registered voters), N = 573. 2010 PSR (Princeton Survey Research, RDD national sample), N = 903. * Variations in question wording across surveys are noted in the online Appendix.

the dataset in an effort to represent a national sample. Although there is no way to determine whether participants in the survey are completely representative of the national public, we do not find notable differences between the weighted CCES data and other weighted national surveys that employ random sampling techniques. For example, we find similar distributions of responses to questions about reported interest in politics and presidential vote choice in the 2008 CCES and the 2008 ANES.²⁵ These data are supplemented by two other shorter surveys: (1) an RDD sample of Michigan (MI) registered voters fielded in the spring of 2005 and (2) a nationally representative RDD telephone survey fielded by Princeton Survey Research (PSR) in the fall of 2010.

Ten items from the CCES form the core of the analysis that follows. These are questions about ballot secrecy, which were fielded as part of the pre-election wave of the survey in October 2008. Full question wording is provided in Table 1.²⁶ The first four items focus on the formal secrecy of the voting process and asked respondents whether their vote choices are kept secret. The remaining six questions focused on the social privacy of vote choice. Principal components analysis of the items listed in Table 1 (excluding 'Find out often?', which was only asked to individuals who responded that someone had found out who they voted for) supports the claim that this set of questions taps different beliefs and attitudes. This analysis yielded two distinct factors (loadings, using varimax rotation, shown in online Appendix Table A2), one for psychological (eigenvalue of 1.57) and one for social (eigenvalue of 3.08) secrecy. The next factor had an

(*Note continued*)

measures (born-again status, employment, interest in news, party identification, ideology and turnout). Polimetrix invited a sample of their opt-in panel of 1.4 million survey respondents to participate in the study. Invitations were stratified based on age, race, gender, education and by simple random sampling within strata. Half of the 2,494 respondents who completed our module (1,247 individuals) were randomly assigned to complete the questions about ballot secrecy that we use here. A subset of the 2,494 respondents were matched to the target sample of 1,800 cases based on gender, age, race, region, metropolitan statistical area, education, news interest, marital status, party identification, ideology, religious affiliation, frequency of religious services attendance, income and voter registration status. Approximately 70 per cent (893) of the respondents who completed the secret ballot items were matched to cases in the target sample. Of these, 804 respondents provided responses to all of the items we use in our analysis and, thus, are included in our sample. Finally, weights were calculated to adjust the final sample to reflect the national public on these demographic and other characteristics. For more detailed information on this type of survey and sampling technique see Lynn Vavreck and Douglas Rivers, 'The 2006 Cooperative Congressional Election Study', *Journal of Elections, Public Opinion and Parties*, 18 (2008), 355–66. More broadly, see AAPOR Executive Council Task Force, 'Research Synthesis: AAPOR Report on Online Panels', *Public Opinion Quarterly*, 74 (2010), 711–81, for a report on the strengths and limitations of online panels.

²⁵ In the CCES pre-election survey, we find that 56 per cent of respondents are 'very much' interested in politics and current events (variable = v245, 'Level of interest in politics/current events'). In the ANES pre-election survey, the comparable figure is 52 per cent (variable = V0830001b, 'How interested are you in information about what's going on in government and politics?' = Extremely or Very interested). Among respondents who reported voting in 2008, 54 per cent of the two-party vote share went to Obama in our CCES data; in the ANES, the comparable proportion was 55 per cent. The demographic and political characteristics of the sample used in the analysis that follows are presented in online Appendix Table A1.

²⁶ Fewer than 1 per cent of respondents failed to respond to any individual question. We restrict our analysis to the 804 participants who responded to each of the ballot secrecy items and who completed the post-election wave of the survey where the presidential vote choice question used in the analyses below was asked.

eigenvalue of 0.97, with a scree plot showing a clear ‘elbow’ after the second factor.²⁷ In the MI and PSR surveys we asked subsets of the psychological secrecy questions using similar wordings (differences are noted in the online Appendix).

The distributions of responses to the questions about whether or not one’s vote choices are kept secret (the top half of Table 1) suggest that, from a psychological perspective, many people do not believe that their ballots are kept secret. In the CCES, just over 25 per cent of people believed that the votes they cast are not kept secret. Even in the context of a subsequent question that explicitly states that ‘according to the law, which candidate you vote for is supposed to be kept secret unless you tell someone’, 40 per cent of respondents thought that it would either be ‘not difficult at all’ or ‘not too difficult’ for ‘politicians, union officials, or the people you work for’ to find out who they voted for. The results from the other two surveys indicate that these beliefs are not confined to CCES participants or participants in internet surveys. Nineteen per cent of respondents in the MI survey ($N = 573$) and 27 per cent of respondents in the PSR survey ($N = 903$) thought their choices were not secret and 37 per cent (of MI respondents) and 41 per cent (of PSR respondents) thought that it would be ‘not too difficult’ or ‘not difficult at all’ for someone to find out which candidate they had chosen. Finally, among the 11 per cent (22 per cent) of the CCES (MI) sample who thought that someone had actually found out about their vote, 44 per cent (38 per cent) thought this violation of secrecy was pervasive (happening ‘always’ or ‘in most elections’). Overall, these responses suggest widespread doubt about ballot secrecy.

We also find that although doubts about the psychological secrecy of the ballot vary across demographic groups, they are not confined to the subsets of the population for which we might expect this misinformation to be most prevalent (such as among those with low socioeconomic status) given their relative lack of participation.²⁸ For example, although there is a 16 percentage point difference in beliefs that choices are not kept secret between those with a high school diploma or less and those with a college degree, even among those with a college degree, 18 per cent did not think their ballot choices were kept secret.²⁹ Similarly, although Black and Hispanic respondents were more likely to say they thought it would be ‘not too difficult’ or ‘not difficult at all’ for someone to find out which candidate they had chosen (54.0 per cent and 48.8 per cent, respectively), a large number of White respondents (36.2 per cent) also reported these doubts about the secrecy of their choices. In short, doubts about formal ballot secrecy are common, even among those for whom we might not expect them to be.

In terms of the social dimension of secrecy, it appears that very few people treat their vote choice as a strictly private decision. To the contrary, vote choice appears to be something that is often shared. Almost 73 per cent of people say that they mention who they vote for in an important election either ‘almost all the time’ or ‘most of the time’. Fewer than 5 per cent said that they ‘never or almost never’ mention their vote. It is also clear that asking questions about vote choices are far from taboo – just over 12 per cent of

²⁷ George H. Dunteman, *Principal Components Analysis*, Sage University Paper series on Quantitative Applications in the Social Sciences (Newbury Park, Calif.: Sage, 1989).

²⁸ See, for example, Lester W. Milbrath and Madan Lal Goel, *Political Participation: How and Why Do People Get Involved in Politics* (Chicago: Rand McNally College, 1977); Sidney Verba, Kay Lehman Schlozman and Henry Brady, *Voice and Equality: Civic Voluntarism in American Politics* (Cambridge, Mass.: Harvard University Press, 1995).

²⁹ See online Appendix Table A3 for cross-tabulations of each secrecy item with education and other demographic groups.

respondents said that they are ‘rarely’ or ‘never or almost never’ asked about those choices. Furthermore, when asked, 77 per cent say that they are willing to provide an answer either ‘almost all the time’ or ‘most of the time’. Moreover, they overwhelmingly say that they respond honestly to these queries. Ninety-four per cent say they tell the truth about their preference to ‘a close friend or family member’ either ‘almost all the time’ or ‘most of the time’ and 89 per cent say they tell the truth even when they think the person asking (‘a close friend’) may disagree with their choice. Forty-eight per cent say that even if they wanted to keep their vote choice secret from ‘close friends’, they would not be able to do so (a measure that may reflect both an ability to avoid answering a question or a willingness to lie). Finally, as with psychological secrecy, we find that although social secrecy varies somewhat across demographic groups, the practice of discussing one’s choices is common across a wide variety of groups.³⁰ For example, over 60 per cent of respondents in each of the subgroups we examined reported mentioning their vote choice to someone either ‘almost all the time’ or ‘most of the time.’³¹

Considering these two dimensions of ballot secrecy together, we find that 82.6 per cent of the population believes either that their choices are not kept secret (25.5 per cent) or that they will reveal their choices ‘almost all the time’ or ‘most of the time’ (72.6 per cent). Quite apart from the actual secrecy of the ballot then, for a substantial proportion of the population a vote choice is to a large extent not a private decision. Having established this, we next test empirically whether ballot secrecy perceptions affect the decision-making calculus of which candidate to choose.

SECRECY PERCEPTIONS AND VOTING BEHAVIOUR

The expanded vote choice model we proposed above posits that voting decisions are a function of not only the benefit of casting the decisive ballot for one’s preferred candidate $p_p (B_1 - B_2)$, but also of the expected costs associated with one’s vote choice being revealed to others weighted by secrecy perceptions (the perceived probability of disclosure) $p_r (X_1 - X_2)$. To test the claim that variation in secrecy perceptions (p_r) affects vote choice requires identifying both a respondent’s preferred winning candidate ($B_1 - B_2$) and the costs associated with having one’s vote choice revealed to others ($X_1 - X_2$). We focus on the case of the 2008 US Presidential election and assume Candidate 1 is the Democrat (Obama) and Candidate 2 is the Republican (McCain). Although we cannot measure either the B_i or X_i terms directly, the CCES provides several variables useful as proxies. For example, to explain a voter’s candidate preferences on policy grounds ($B_1 - B_2$), we can include measures of whether a respondent is a member of a union household, their partisanship, ideology, issue preferences, race, gender, age, income, education, frequency of religious services attendance and political interest. To calculate the relative social and

³⁰ See online Appendix Table A3.

³¹ In additional analysis (available upon request), we estimated OLS models predicting summary measures of each type of secrecy (measured based on principle component scores reported in online Appendix Table A2 and described in greater detail below) with a series of indicators for each of the race, gender, age, education, income and political interest categories presented in online Appendix Table A3. The models also include indicators for income missing, other race and state fixed effects. The only statistically significant ($p < 0.05$) relationships we find are a positive association between education and psychological secrecy, a positive association between the middle age category (40–60, significantly different from both other age categories) and social secrecy, and negative associations between both income and interest in politics and social secrecy.

economic costs of having been revealed as supporting one candidate over the other ($X_1 - X_2$) we identify two scenarios in which those factors are unambiguously defined.³²

First, consider union members, a group for which we have a clear sense of the potential conflict between an organization's formal electoral goals – supporting Barack Obama – and individual union members' preferences. In the 2008 general election Barack Obama was endorsed by the AFL–CIO, UAW, International Brotherhood of Teamsters, and dozens of other labour unions. To the best of our knowledge, however, John McCain was not endorsed by a single major union. Given this, among union members, the expected net benefits of being found out as having voted for Obama rather than McCain were likely positive ($X_1 - X_2 > 0$). Therefore, we predict that those union members who expected their vote choice to be revealed ($p_r > 0$) – either by themselves or by election administrators – should be less likely to buck the union endorsement by voting for John McCain than those who believed their vote would be kept secret and for whom voting against Obama would not entail expected repercussions.

We note that in the case of union members we expect a lack of psychological secrecy to be particularly relevant. Doubts about the formal secrecy of the ballot suggest a concern that other individuals or groups will surreptitiously monitor or access one's ballot choices. Unions are well-organized, have substantial resources, and devote a substantial proportion of these resources to affecting election outcomes. Thus, union members who are not confident that their choices are well-protected may believe that union leaders have both the power and motivation to access their ballots. Because of this, they may decide to vote for the union-endorsed candidate rather than risk exposure and possible professional sanctions. Although lack of social secrecy may also affect union members' choices, we view this as less likely. This is because, as Finifter finds, individual union members can choose which other union members they associate with and are likely to seek out politically like-minded discussants.³³ Put another way, union membership is unlikely to be a clear-cut proxy for the political preferences of the people with whom union members expect to discuss their vote choices.

The second case we examine is that of partisans. We base our hypotheses about how partisans respond to varying levels of secrecy on prior research showing that people have

³² We do not mean to suggest that these are the only situations in which individuals face conflicts between their personal beliefs and social and economic pressures. For example, federal election laws include an exception that allows businesses to spend company resources on political communications to its restricted class, which includes shareholders and employees. See Thomas Joo, 'Corporate Governance and the Constitutionality of Campaign Finance Reform', *Election Law Journal: Rules, Politics, and Policy*, 1 (2002), 361–72. Thus, employers of all kinds may seek to influence their workers' votes, and there is evidence to suggest that they attempt to do so. See, for example, Allan J. Cigler, 'Interest Groups and Financing the 2004 Elections', in David B. Magleby, Anthony Corrado and Kelly D. Patterson, eds, *Financing the 2004 Elections* (Washington, D.C.: Brookings Institution Press, 2006); Allan J. Cigler, 'Interest Groups and Financing the 2000 Elections', in David B. Magleby, ed., *Financing the 2000 Elections* (Washington, D.C.: Brookings Institution Press, 2002); David B. Magleby, J. Quin Monson and Kelly D. Patterson, *Dancing without Partners: How Candidates, Parties, and Interest Groups Interact in the Presidential Campaign* (Lanham, Md.: Rowman & Littlefield, 2007). In addition, religious groups may behave similarly. See, for example, Mark D. Regnerus, David Sikkink and Christian Smith, 'Voting with the Christian Right: Contextual and Individual Patterns of Electoral Influence', *Social Forces*, 77 (1999), 1375–401. Rather, the two scenarios we examine empirically are simply those where we have (relatively) well-defined measures of the potential conflicts between personal preferences and these other concerns.

³³ Finifter found that in Detroit automobile plants in the early 1960s, where the predominant partisanship of the shop was Democrat, Republicans found like-minded individuals to discuss politics with (Ada Finifter, 'The Friendship Group as a Protective Environment for Political Deviants', *American Political Science Review*, 68 (1974), 607–25).

greater interaction with those who share their political outlook³⁴ and that stronger partisans hold policy opinions more congruent with their party's candidate. Thus, partisan affiliation has two dimensions that are likely to affect vote choices. First, partisanship indicates the strength and direction of one's political preferences ($B_1 - B_2$). Secondly, it is an identity that is likely to proxy the preferences of others in an individual's discussion network and, therefore, the social costs associated with one's vote being revealed to these discussants ($X_1 - X_2$).³⁵ Because public deviation from the preferences of one's peers may entail costs, it follows that for partisans the expected net social benefit of being revealed as having voted for their party's candidate rather than the opposition are positive ($X_1 - X_2 > 0$ for Democrats and $X_1 - X_2 < 0$ for Republicans). Thus, we predict that after accounting for individuals' policy preferences, partisans who expect their vote choices to be revealed ($p_r > 0$) are less likely to deviate from their partisan affiliation than those who do not. For example, because of the (avoided) potential social costs of admitting to other Republicans that they supported Obama, we anticipate that Republicans who expect to be asked to share their vote choice will be more likely to vote for McCain than those who expect to keep their choices secret.

Importantly, we hypothesize that the effect of social pressure on voting will vary across different types of partisans. Although 'strong' partisans may face the largest social sanctions if they deviate from their party's candidate, they typically also strongly prefer their party's candidate ($|B_1 - B_2|$ is relatively large). 'Weak' partisans, by contrast, may feel social pressure to vote with their party, but may have weaker policy preferences about which candidate wins in a particular election ($|B_1 - B_2|$ is smaller than for strong partisans). These voters may be the most likely to allow potential social costs to trump their preferences regarding which candidate wins. Finally, if independents (including partisan 'leaners') are commonly exposed to a mix of partisans, this suggests that their vote choice may be unaffected by expected secrecy.³⁶

In contrast to the psychological secrecy effects for union membership discussed above, our expectations regarding the consequences of the intersection between ballot secrecy perceptions and partisanship are not premised on the notion that people worry that their acquaintances will attempt to find out their vote choices without their permission. Indeed, few individuals are likely to think that their friends are powerful or motivated enough to surreptitiously find out about their ballot choices. Instead, these effects are likely to be associated with a perceived lack of social secrecy – i.e., an expectation that one will disclose one's choices to the co-partisans in one's social network.

³⁴ See, for example, Robert Huckfeldt and John Sprague, *Citizens, Politics, and Social Communication* (New York: Cambridge University Press, 1995); Diana C. Mutz, 'Cross-cutting Social Networks: Testing Democratic Theory in Practice', *American Political Science Review*, 96 (2004), 111–26. Also, because partisanship is closely connected to early socialization, it tends to be correlated within families. See, for example, Paul Allen Beck and M. Kent Jennings, 'Family Traditions, Political Periods, and the Development of Partisan Orientations', *Journal of Politics*, 53 (1991), 742–63.

³⁵ Paul Allen Beck, Russell J. Dalton, Steven Greene and Robert Huckfeldt, 'The Social Calculus of Voting: Interpersonal, Media, and Organizational Influences on Presidential Choices', *American Political Science Review*, 96 (2002), 57–73. Research also shows that many people believe that others in their social network share their political preferences. See, for example, Robert Huckfeldt, Paul Allen Beck, Russell J. Dalton and Jeffrey Levine, 'Political Environments, Cohesive Social Groups, and the Communication of Public Opinion', *American Journal of Political Science*, 39 (1995), 1025–54. Thus, even if party identification does not signal the true preferences of a person's social network, it provides a useful measure of what he or she is likely to believe about these preferences.

³⁶ Additionally, 'pure' independents and partisan 'leaners' do not identify with a party in response to the stem of the standard party identification measure. Thus, unlike partisan identifiers, they are less likely to be concerned about social sanctions associated with deviating from a given party's candidate.

Empirical Findings Concerning Secrecy and Voting Behaviour

We report tests of these hypotheses in Table 2, where we present a series of models predicting reported vote choice in the 2008 election. Because doubts about secrecy may prompt some people to abstain, rather than change their vote choice, in our primary analysis we specify abstention as the midpoint on the vote choice scale.³⁷ This specification allows deviations from privately preferred candidates in the face of employer or social pressure to take two forms: abstention or, in a more extreme move, defection. We also repeat our primary analysis (reported in Columns 1–5) by excluding minor party voters in Column 6 and then excluding both minor party voters and those who abstain in Column 7. These alternative model specifications allow us to assess whether our results are sensitive to the inclusion of these respondents.

In order to simplify the analysis of the relationships between psychological and social secrecy and voting, as well as to reduce measurement error for the two dimensions of secrecy, we used the component loadings from the principal components analysis reported in online Appendix Table A2 to calculate standardized scores for each type of secrecy ($M = 0$, $SD = 1$).³⁸ We also include state fixed effects as well as a set of demographic and political control variables: race, gender, age, age-squared, marital status, religious attendance, education (entered as a series of indicators for each response category), income (linear scale with a separate indicator for income missing), interest in politics, ideology, and an index of four standardized issue attitudes. We note that the last two controls (ideology and issue attitudes) are particularly important in accounting for individuals' preferences regarding which candidate wins the election ($B_1 - B_2$).

The results in the Table 2, Column 1 specification are a baseline vote choice model that establishes that there is no direct relationship between either secrecy scale and vote choice. These results suggest that in 2008, on average, there was no incentive to conceal a Republican vote more than a Democratic vote. Beginning with the Column 2 specification, we present a series of models that tests our predictions about how variation in secrecy beliefs moderates the effects of union membership and party affiliation. We do so by including (a) interactions between the union membership variable and each of the secrecy scales, and (b) interactions between indicators for each partisanship response category (excluding pure independents) and each of the secrecy scales.

If secrecy beliefs condition the influence of union membership, then we should observe a negative coefficient on the interactions between the secrecy scales and union membership. This would mean that union members who believe their choices are secret are more likely to vote for McCain. Turning next to the relationship between voting, secrecy and partisanship, we expect the signs on the interactions between the secrecy measures and the party identification indicators to vary in a particular way. Strong partisan identifiers are likely to be firmly committed to their party's candidate and vote for that candidate regardless of whether or not they expect to reveal their choices. By contrast, weak identifiers may be less committed to their party's candidate and may sometimes be inclined to vote for the opposing candidate. Among these less committed

³⁷ Minor party voters, of whom there are fewer than ten in our weighted sample, are also specified as the midpoint of the scale in our primary analysis.

³⁸ We obtain highly similar results to those presented in Table 2 when additive scales of standardized ($M = 0$, $SD = 1$) items are used to measure each secrecy concept. The Cronbach's alphas are 0.496 and 0.763 for these psychological and social secrecy scale scales, respectively. These results are available upon request.

TABLE 2 *Ballot Secrecy and Presidential Vote Choice (CCES)*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Full Sample (-1 = McCain; 0 = Other/Didn't Vote; +1 = Obama)						
					Third Party Voters Excluded		
					(6) + Nonvoters Excluded		
Psychological Secrecy (PC)	0.022 [0.025]	0.020 [0.063]	0.019 [0.066]	-0.191 [0.177]	0.152 [0.224]	0.020 [0.063]	0.082 [0.100]
Social Secrecy (PC)	-0.009 [0.031]	-0.018 [0.040]	-0.013 [0.040]	-0.215 [0.243]	0.042 [0.169]	-0.021 [0.041]	-0.111 [0.151]
Psychological Secrecy × Union HH (1 = yes)		-0.133 [0.046]***	-0.106 [0.048]**	-0.109 [0.051]**	-0.634 [0.320]**	-0.132 [0.047]***	-0.146 [0.049]***
Social Secrecy × Union HH (1 = yes)		0.019 [0.047]	-0.039 [0.067]	-0.068 [0.062]	-0.341 [0.277]	0.024 [0.048]	0.003 [0.073]
Psychological Secrecy × Party: Strong Republican		0.060 [0.065]	0.043 [0.070]	-0.017 [0.093]	0.204 [0.423]	0.055 [0.065]	0.017 [0.094]
Psychological Secrecy × Party: Weak Republican		-0.104 [0.085]	-0.116 [0.092]	-0.192 [0.104]*	-0.761 [0.413]*	-0.097 [0.085]	-0.212 [0.122]*
Psychological Secrecy × Party: Lean Republican		0.115 [0.091]	0.100 [0.093]	0.081 [0.110]	0.455 [0.467]	0.149 [0.093]	0.097 [0.111]
Psychological Secrecy × Party: Lean Democrat		0.092 [0.088]	0.075 [0.091]	0.089 [0.104]	0.459 [0.410]	0.091 [0.089]	-0.010 [0.110]
Psychological Secrecy × Party: Weak Democrat		0.112 [0.085]	0.090 [0.088]	0.028 [0.092]	0.231 [0.309]	0.116 [0.085]	-0.044 [0.142]
Psychological Secrecy × Party: Strong Democrat		0.006 [0.072]	-0.027 [0.077]	-0.048 [0.088]	-0.147 [0.490]	0.007 [0.073]	-0.038 [0.101]
Social Secrecy × Party: Strong Republican		-0.063 [0.072]	-0.079 [0.070]	-0.095 [0.091]	-0.725 [1.009]	-0.054 [0.072]	0.096 [0.160]
Social Secrecy × Party: Weak Republican		0.139 [0.057]**	0.122 [0.062]*	0.050 [0.067]	0.562 [0.269]**	0.140 [0.058]**	-0.008 [0.160]
Social Secrecy × Party: Lean Republican		0.057 [0.129]	0.040 [0.137]	0.010 [0.156]	0.088 [0.477]	0.069 [0.130]	0.134 [0.203]
Social Secrecy × Party: Lean Democrat		0.178 [0.078]**	0.181 [0.082]**	0.257 [0.099]***	1.050 [0.571]*	0.177 [0.079]**	0.218 [0.166]
Social Secrecy × Party: Weak Democrat		-0.102 [0.074]	-0.112 [0.069]	-0.138 [0.076]*	-0.323 [0.379]	-0.105 [0.075]	0.029 [0.178]
Social Secrecy × Party: Strong Democrat		-0.048 [0.093]	-0.008 [0.092]	0.022 [0.086]	-0.459 [0.533]	-0.050 [0.093]	0.162 [0.162]
Party: Strong Republican	-0.552 [0.092]***	-0.614 [0.098]***	-0.732 [0.292]**	-0.925 [0.276]***	-2.521 [0.585]***	-0.618 [0.100]***	-0.614 [0.136]***

TABLE 2 (Continued)

Party: Weak Republican	-0.420	-0.545	-0.641	-1.452	-0.433	-0.589
	[0.099]**	[0.195]***	[0.182]***	[0.520]***	[0.102]***	[0.136]***
Party: Lean Republican	-0.323	-0.374	-0.442	-0.884	-0.346	-0.412
	[0.124]**	[0.148]**	[0.145]***	[0.559]	[0.130]***	[0.161]**
Party: Lean Democrat	0.544	0.609	0.660	2.541	0.538	0.659
	[0.100]**	[0.131]***	[0.132]***	[0.540]***	[0.102]***	[0.142]***
Party: Weak Democrat	0.285	0.409	0.586	1.055	0.290	0.459
	[0.097]**	[0.200]**	[0.190]***	[0.468]**	[0.099]***	[0.151]***
Party: Strong Democrat	0.482	0.641	0.851	2.093	0.475	0.597
	[0.085]***	[0.286]**	[0.266]***	[0.467]***	[0.095]***	[0.137]***
Union HH (1 = yes)	0.077	-0.272	-0.544	0.710	0.064	0.019
	[0.048]	[0.046]	[0.450]	[0.335]**	[0.047]	[0.055]
Constant	-0.678	-0.234	-0.473	-0.150	-0.196	0.053
	[0.225]***	[0.274]	[0.318]	[0.206]	[0.242]	[0.230]
Observations	804	804	804	804	786	702
R-squared	0.720	0.738	0.751	-	0.744	0.807
State Fixed Effects	Yes	Yes	Yes	No	Yes	Yes
All Union and Party ID Interactions	No	Yes	Yes	No	No	No
Union and PID interactions (Prob > F)	-	0.023	0.027	-	-	-
All Social and Psychological Secrecy Interactions?	No	No	Yes	No	No	No
Secrecy interactions (Prob > F)	-	-	0.000	-	-	-
Social Secrecy × PID (Prob > F)	-	0.007	0.002	0.060	0.008	0.264
Psychological Secrecy × PID (Prob > F)	-	0.139	0.131	0.252	0.121	0.090

Note: Weighted analysis. OLS in columns (1)-(4) and (6)-(7); ordered logit in column (5). Robust standard errors in brackets. *** p < .01; ** p < .05; * p < .10 (two-tailed). Summary statistics for CCES variables presented in Online Appendix Table A1. See Online Appendix Table A2 for principle component loadings used to construct psychological and social secrecy scales. All columns include controls for: race (black), race (Hispanic), race (other), gender, age, age-squared, married/domestic partnership, religious attendance, education (five indicator variables), income (linear scale with separate indicator for income missing), interest in politics, ideology, and an index of four standardized issue attitudes. These coefficients are not shown. In columns (3) and (4), thirteen union and twelve party ID interactions interact the union and party identification measures individually with: race (black), race (Hispanic), race (other), gender, age, age-squared, married/domestic partnership, religious attendance, education, income, income missing, interest in politics, ideology (union only), and the issue attitude index (union only). In column (4), thirteen Social and thirteen Psychological Secrecy interactions interact each of the secrecy measures with: race (black), race (Hispanic), race (other), gender, age, age-squared, married/domestic partnership, religious attendance, education, income, income missing, interest in politics, ideology, and the issue attitude index. Coefficients not shown. (Full results presented in Online Appendix Table A4).

partisans we expect those who anticipate sharing their vote choices with others (who are likely to be co-partisans) to be more likely to conform to the common choice of those in their social environment and, thus, avoid the (social) costs associated with disagreement. If this is the case, the interaction between the indicator for weak Democrats and social secrecy should be negative and the interaction between the indicator for weak Republicans and social secrecy should be positive. Finally, although partisan leaners, like weak partisans, are likely to be less committed to their party's candidate than strong identifiers, they are different from weak identifiers in two respects. First, they are more likely than leaners to be exposed to a mix of partisans. Secondly, they do not identify with the party in the same way as strong and weak partisans do (by definition: partisan leaners do not say they are a partisan in response to the stem of the standard party identification measure). Given these two differences, we might expect partisan leaners to vote for their preferred candidate regardless of whether or not they expect to reveal their choices.

These predictions are largely confirmed. Focusing on the Column 2 specification, which includes these interactions as well as all of the covariates included in the Column 1 specification, we find that the interaction between psychological secrecy and union status is negative and statistically significant.³⁹ This means that union members who believed that their choices are formally kept secret were less likely to vote for Obama than those who believed their choices might be revealed. The magnitude of this conditioning effect is quite large. The outcome variable ranges from -1 (vote for McCain) to $+1$ (vote for Obama). Among independents (the excluded partisanship category) not living in union households, there is no statistically significant relationship between psychological secrecy and vote choice ($b = 0.20, p = 0.747$). In contrast, among those in union households a two standard deviation increase in the scale measuring beliefs that ballot choices are kept secret is associated with a 0.226 unit decrease in the outcome or an 11.3 percentage point increase in the likelihood of voting for John McCain.⁴⁰

Turning next to the empirical findings regarding the partisan identification interactions, we find that the interactions between the six party identification indicators and the social secrecy measure are jointly statistically significant ($p < 0.01$).⁴¹ The coefficient on the social secrecy variable ($b = -0.018, p = 0.649$) indicates that there is no relationship between this measure and vote choice among pure independents. We find that the coefficients on the interactions between the indicators for strong party identifiers and social secrecy are statistically and substantively insignificant. In contrast, the interaction between social secrecy and the weak Republican indicator is statistically significant and in the expected direction; the coefficient on the interaction between social secrecy and the weak Democrat indicator is in the expected direction, but falls short of conventional levels of statistical significance ($p = 0.170$). These findings suggest that the relationship between social secrecy and vote choice is different for weak identifiers (compared to pure independents). Calculations of the linear combination of the coefficients on the social secrecy measure and each of the weak identifier interactions indicate that among weak Republicans a two standard deviation increase in social secrecy was associated with a 24.1 percentage point increase in the likelihood of voting for Obama ($p < 0.01$). Among weak

³⁹ There is not a statistically significant effect for the interaction of social secrecy and union status.

⁴⁰ The linear combination of the coefficient on psychological secrecy and the interaction between psychological secrecy and the union household indicator is: -0.113 ($p < 0.05$).

⁴¹ The interactions between psychological secrecy and the partisanship indicators fall short of conventional levels of statistical significance; $p = 0.139$.

Democrats the same increase in social secrecy was associated with a 24.1 percentage point increase in the likelihood of voting for McCain ($p < 0.10$).⁴²

Although we have restricted our hypotheses to strong and weak partisans and pure independents, Table 2 also reports results for independents who lean towards one party or the other. We find that among partisan leaners from both parties, those who said they were less likely to share their vote choice were more likely to vote for Obama. This moderating effect is statistically significant among leaning Democrats ($p < 0.05$). Given the ambiguity associated with the meaning of the 'leaning' partisan categorization,⁴³ we simply note that the finding concerning partisan leaners, while not explained by our theoretical account, may be of interest to other scholars and should be replicated in other contexts because it was not expected a priori.

In Columns 3 and 4 of Table 2 we consider the robustness of these findings. A first concern is whether the moderation analysis we conduct is a reliable test of our hypotheses. By interacting union membership and partisanship with secrecy perceptions, we are assuming that there is no interaction between the other covariates (such as ideology) and those factors that proxy ($X_1 - X_2$) (union membership and partisanship). This assumption may be unfounded. The model presented in Column 3 addresses this concern by including twenty-six interactions between (a) a linear (7-point) measure of partisanship and (b) union membership and the other covariates.⁴⁴ The results with regard to the effect of union membership and psychological secrecy and partisanship and social secrecy from Column 2 persist and are similar in magnitude.

The model presented in Column 4 goes even further, adding an additional twenty-eight interactions – each of the other original covariates interacted with the social secrecy and psychological secrecy scales. Although the coefficient on the interaction between the weak Republican indicator and social secrecy falls below conventional levels of statistical significance in this model, for the most part the results discussed above are substantively similar. This analysis demonstrates that our results are not driven by the interaction between some other variable and secrecy perceptions.

A second concern is that our results are an artefact of model specification such as the use of ordinary least squares (OLS) or coding of the dependent variables. In Column 5 we estimate the same model as in Column 2, but using ordered logit instead of OLS.⁴⁵ The interaction between union household and psychological secrecy remains negative and statistically significant. The signs on the weak partisan identifiers x social secrecy interactions remain the same, but the weak Democrat interaction is not statistically significant ($p = 0.394$, two-tailed). In Column 6 we again repeat the Column 2 specification (including the use of OLS), but exclude third-party voters and in Column 7 we exclude both third-party voters and non-voters. Again, in these two models the interaction between union household and

⁴² To the extent that some respondents are only faced with situations where they would disclose their choices to like-minded individuals, these estimates understate the potential consequences of social secrecy.

⁴³ Bruce E. Keith, David B. Magleby, Candice J. Nelson, Elizabeth Orr, Mark C. Westlye and Raymond E. Wolfinger, *The Myth of the Independent Voter* (Berkeley: University of California Press, 1992).

⁴⁴ We do not interact ideology or the issue attitude index with partisanship because of the similarities in these measures, but doing so does not materially alter these findings. See John G. Bullock and Shang E. Ha, 'Mediation Analysis Is Harder than It Looks', in James N. Druckman, Donald P. Green, James H. Kuklinski and Arthur Lupia, eds, *Cambridge Handbook of Experimental Political Science* (New York: Cambridge University Press, 2011) for a discussion of robustness checks in mediation and moderation analysis.

⁴⁵ In addition, Column 5 does not include state indicators because ordered logit models are inconsistent with fixed effects given the sample sizes we have within states.

psychological secrecy is negative and statistically significant, and similar in magnitude to the coefficient in Column 2. However, the interactions between social secrecy and weak partisan identifiers, although largely the same when third-party voters are excluded in Column 6, are statistically insignificant and substantively small when non-voters are also excluded in Column 7. This suggests that a lack of social secrecy may affect whether people abstain, rather than affecting which candidate an individual votes for (a potential avenue for future work, but beyond the scope of this article),⁴⁶ a finding that is consistent with work by Mutz, who finds that, compared to discussion of politics between politically homogeneous interlocutors, discussion of politics between politically heterogeneous interlocutors results in lower participation rates.⁴⁷

A third concern we address is whether our findings about secrecy perceptions instead reflect another omitted variable. In particular, one plausible candidate is trust in government⁴⁸ – those low in trust may have doubts about formal ballot secrecy or their ability to keep their decisions private and low trust may simultaneously affect candidate preferences. However, to explain the results we find with regard to union membership, it would have to be the case that union members low in trust had greater doubts about psychological secrecy and were more likely to support Obama than those high in trust, but that these associations did not exist for non-union members.⁴⁹ One could also imagine similar scenarios explaining our finding about the interaction between social secrecy and partisanship.

Unfortunately, the CCES data we analyse lacks a trust in government measure. This forces us to consider alternative approaches for ruling out a trust-based explanation. We begin by noting that our results are robust to controlling for the direct effects of both ideology and issue positions that are likely to be associated with trust in government, as well as interactions between these measures and union membership and each of the secrecy measures. If (less trusting) union members or partisans were ideologically distinct from their more trusting counterparts then these controls would address this concern.⁵⁰

Additionally, we turned to another 2008 election survey, the Cooperative Campaign Analysis Project (CCAP),⁵¹ which does include a measure of trust in government, to directly examine the effect of trust perceptions on voting decisions.⁵² Using these alternative data, we

⁴⁶ See Alan S. Gerber, Gregoy A. Huber, David Doherty, Conor M. Dowling and Seth J. Hill, 'Do Perceptions of Ballot Secrecy Influence Turnout? Results from a Field Experiment' (unpublished, Department of Political Science, Yale University, 2011).

⁴⁷ Mutz, *Hearing the Other Side*; Diana C. Mutz, 'The Consequences of Cross-Cutting Networks for Political Participation', *American Journal of Political Science*, 46 (2002), 838–55.

⁴⁸ Jack Citrin, 'Comment: The Political Relevance of Trust in Government', *American Political Science Review*, 68 (1974), 973–88; Marc J. Hetherington, 'The Political Relevance of Political Trust', *American Political Science Review*, 92 (1998), 791–808.

⁴⁹ Note that the opposite pattern – low trust union members being more Republican – could not explain our finding if low trust leads to lack of confidence in secrecy protections.

⁵⁰ Note too that this finding suggests it is not simply that non-trusting individuals are somehow different (ideologically) from their environments because we control for individuals' social identities (partisanship and union membership) and those policy preferences (ideology).

⁵¹ Simon Jackman and Lynn Vavreck, Cooperative Campaign Analysis Project, 2007–2008 Panel Study: Common Content, [Computer File] Release 1: February 1, 2009, Los Angeles, CA: UCLA.

⁵² The CCAP was also conducted by Polimetrix and the sample was constructed to be representative of registered voters. Trust in Government item: 'How much of the time do you think you can trust the government in Washington (D.C.) to do what is right? 1. Almost never; 2. Some of the time; 3. Most of the time; 4. Just about always.' The political interest measure solicited respondents' level of 'interest in politics and current events'.

TABLE 3 Robustness: Trust in Government and Presidential Vote Choice (CCAP)

	Full Sample (-1 = McCain; 0 = Other/Didn't Vote; +1 = Obama)
Trust in Government (Standardized, Mean = 0, SD = 1)	0.02 [0.108]
Party: Strong Republican	-0.919 [0.123]***
Party: Weak Republican	-0.521 [0.156]***
Party: Lean Republican	-0.757 [0.128]***
Party: Lean Democrat	0.707 [0.123]***
Party: Weak Democrat	0.823 [0.123]***
Party: Strong Democrat	0.649 [0.118]***
Union HH (1 = yes)	-0.073 [0.057]
Trust in Government × Party: Strong Republican	-0.01 [0.112]
Trust in Government × Party: Weak Republican	0.214 [0.155]
Trust in Government × Party: Lean Republican	-0.091 [0.132]
Trust in Government × Party: Lean Democrat	-0.059 [0.128]
Trust in Government × Party: Weak Democrat	-0.043 [0.141]
Trust in Government × Party: Strong Democrat	0.032 [0.119]
Trust in Government × Union HH (1 = yes)	0.087 [0.061]
Constant	0.303 [0.393]
Observations	655
R-squared	0.700

Note: Weighted OLS analysis. Robust standard errors in brackets. *** $p < .01$; ** $p < .05$; * $p < .10$ (two-tailed). Data source is 2008 CCAP (see text for details). Includes controls for: race (black), race (Hispanic), race (other), gender, age, age-squared, married/domestic partnership, religious attendance, education (five indicator variables), income (linear scale with separate indicator for income missing), interest in politics, ideology, and state fixed effects. These coefficients are not shown.

present in Table 3 a model that includes the same covariates presented in the Table 2, Column 2 specification, but with the secrecy interactions replaced by trust in government interactions. We find that those high in trust are slightly more likely to support Obama, but that there is no evidence that variation in trust affects the relationship between either union membership or partisanship and vote choice. Thus, we believe it is unlikely that our results originate in an omitted trust variable being proxied by secrecy perceptions.

Overall, our results demonstrate that beliefs about the secrecy of the ballot have important implications for our understanding of voting decisions. The more doubts individuals from union households had about whether or not their vote choices would be kept secret, the more likely they were to adopt the union position in their vote choice. We also find that weak partisans are more likely to toe the party line if they expect to discuss their voting decisions with others, though we note that the finding that independents who lean Democratic are more likely to vote Democratic when they believe there is greater secrecy was not predicted by our theoretical account of how partisanship and secrecy interact. This dissonant note notwithstanding, the weight of the findings is consistent with the view that beliefs about ballot secrecy play an important role in voter choice. More generally, these findings highlight the extent to which social pressures – the very pressures the secret ballot is designed to eliminate – can continue to affect decisions about which candidate to support.

DISCUSSION AND CONCLUSION

Advocates of the secret ballot argued that ballot secrecy would free citizens to express their preferences in the voting booth without fear of repercussions for a particular vote choice. We show, however, that this institutional reform is not sufficient to transform voting into an entirely private act. Although the ballot is formally secret and reformers may have achieved a great deal of what they desired (for example, elite mobilization efforts have shifted away from outright intimidation and vote buying), large swaths of the public either have doubts about how well their choices are protected or expect to share their choices with others. We suggest that these psychological and social dimensions of the secret ballot have the potential to alter the costs and benefits people weigh when deciding which candidate to vote for.

The psychological and social aspects of ballot secrecy each seem to affect vote choices in distinct ways. Union membership conditioned the effects of psychological secrecy but not social secrecy; partisanship conditioned the effects of social secrecy but not psychological secrecy. It appears that beliefs about the formal secrecy of the ballot are particularly relevant when a voter fears formal sanctions from a third party – such as an employer or the leader of an organization. In contrast, the effects of social secrecy appear to be more closely tied to concerns about social sanctions, such as the discomfort of disagreeing with friends and family.

The effects we observe here on vote choice could also influence citizen behaviour in other types of political activity, such as how one participates in political discussions. Individuals who find themselves in a social, professional or familial environment may voice opinions that they do not agree with in order to avoid potential social and economic costs. For example, an individual working at a business with many wealthy clients may oppose the estate tax (also referred to as the death tax) even in non-work contexts, because of the risk that his or her employer or clients would disapprove of his or her support for the tax if they found out; someone in a particularly liberal work environment (or other social context) may say they support abortion rights in order to avoid the social costs associated with disagreement on such a high-interest issue, particularly if they are otherwise ambivalent about the issue. These dynamics could have important implications in that they may create a false sense of consensus about policies when in fact many people are either ambivalent or part of a (quiet) opposition.

Our analysis relies solely on conscious, self-reported perceptions about secrecy. The act of asking these questions may have raised doubts in respondents' minds about the secrecy

of the ballot, which raises the question of whether these responses are meaningful or reflect non-attitudes. We think there are two reasons to believe the responses are meaningful. First, the fact that such a large percentage of the respondents were willing to voice concerns on multiple items, including items asking if they themselves had experienced a violation of the secrecy of their own ballot, suggests widespread doubts about ballot secrecy. Secondly, we find evidence that perceptions of ballot secrecy affect voting behaviour. If people's responses to the secrecy questions were largely random, we would not expect to find the associations between these measures and vote choice. The fact that we find these relationships suggests that the secrecy perception measures are meaningful.

Moreover, even if the survey items exaggerate the absolute level of doubt but accurately identify those members of the public who have greater levels of doubt, the measure is extremely useful in understanding the consequences of doubts about ballot secrecy. As we note when discussing our model of vote choice, even if an individual thinks it is highly unlikely that her choice will be revealed, if the perceived likelihood of disclosure is still larger than the perceived likelihood of being pivotal, these inklings of doubt may affect vote choices. Additionally, it is possible we are underestimating the total consequences of lack of secrecy on vote shares. The effects we discuss here could have cascading effects. Voting preferences held by one person in a social network might spill over, exerting pressure on others to conform to that preference. As more people are affected by this social pressure, the breadth of its influence may grow exponentially.

These findings about how people decide who to vote for have important consequences for institutional design and practices.⁵³ For example, in many states, primary elections are conducted via a caucus system where one's vote choices are revealed to others. The relatively low turnout in these caucuses may, in part, be a function of people being unwilling to bear the potential costs associated with revealing one's political preferences in a public forum. Perhaps more troubling, given the decision to vote in a caucus, people may feel obligated to cast votes designed to avoid social or substantive repercussions from neighborhood organizations, union leaders or even employers who attend the caucus.⁵⁴ The recent shift to mail-in (postal) ballots, with the concomitant increase in voting parties and other social gatherings to fill out these ballots, raises similar concerns.⁵⁵ Voting technology also varies across states and districts. These technologies, as well as other seemingly benign aspects of the voting process (such as how much space there is between voting booths), may affect perceptions of secrecy. For example, if voters do not have a clear sense of how electronic voting machines work, they may suspect that these machines provide a way of matching their identity with their ballot choices and may alter their choices in anticipation of their votes being revealed to employers, government or party officials, or others.

The findings we present here also have implications that extend far beyond the decisions citizens make in presidential elections. Each year citizens are called upon to vote in a vast array of governmental elections that may range from local city council to US Senator.

⁵³ Thad E. Hall, J. Quin Monson and Kelly D. Patterson, 'The Human Dimension of Elections: How Poll Workers Shape Public Confidence in Elections', *Political Research Quarterly*, 62 (2008), 507–22.

⁵⁴ Christian R. Grose and Carrie A. Russell, 'Avoiding the Vote: A Theory and Field Experiment of the Social Costs of Public Political Participation' (paper presented at the Annual Meetings of the American Political Science Association, Boston, 2008).

⁵⁵ In supplementary analysis (available upon request) we found few differences in secrecy perceptions between those who reported voting by mail or absentee and those who reported voting in person.

In most of these elections, votes are cast through a formalized secret ballot process administered by election administrators, whom most (but, as we show, not all) voters presumably have little reason to think would inappropriately reveal their choices. However, consider the case of a less formal election process – such as Parent Teacher Association (PTA) or union officer elections. In these cases, those casting ballots may (rightly or wrongly) have serious doubts about the trustworthiness of the people collecting and tallying the ballots. In those cases, these doubts about the secrecy of the ballot may substantially affect the outcomes by changing who votes and the choices of those who do.

The larger point made in this article is that the case of the secret ballot suggests the relationship between election (or other) rules and citizen beliefs may not be straightforward or constant across population subgroups. That is to say, institutions shape voter beliefs, which in turn affect voter behaviour. Consequently, the intermediate step in the analysis that flows from rules to behaviour might deserve more attention than it often receives. It may be worth asking as a matter of course: How does this intervention/institution shape voter beliefs about how alternative actions produce costs and benefits? Explicitly considering how an institution or an intervention shapes beliefs, which in turn affects behaviour, may be crucial to accurately assessing the consequences of an intervention. In many cases, elaborating this intermediate step between institutions and choice may be unnecessary because the effects of a rule change on beliefs about the consequences of choosing among alternatives is clear and uncomplicated. However, our investigation of ballot secrecy beliefs, an area that would seem a priori like a ‘hard case’ for finding an important role for beliefs apart from the formal rules themselves, suggests that overlooking the role of beliefs in the mapping from institutions to behaviour may be inadvisable.

The results point to a link between beliefs regarding ballot secrecy and voting behaviour,⁵⁶ but for familiar reasons we cannot make definitive claims about the causal nature of these associations based on the naturally occurring variation in respondent beliefs about ballot secrecy. For example, our analysis is based on self-reported discussion habits and vote choices. Thus, our estimates may be biased by unmeasured characteristics that affect how people respond to survey items. Similarly, there may be omitted variables correlated with secrecy and vote choice. We attempt to reduce this vulnerability by including a collection of standard control variables that explain vote choice and also by examining the robustness of the findings across model specifications. For example, the finding that those in union households who doubt ballot secrecy are more likely to vote Democratic holds after controlling for race, education and other variables, as well as interaction terms that permit the relationship between those variables to differ for those in and not in union households.

An additional potential threat to our analysis is that we are unable to determine the direction of the causal relationship between voting and secrecy perceptions with certainty. An alternative explanation for the fact that party identification conditions the relationship between social secrecy and vote choice is that people choose who to vote for and then make a decision as to whether they discuss their choice with others. For example, an individual who chooses to vote for Obama may decide not to discuss this choice with others if she anticipates that they will disagree with her choice. Despite the fact that our questions are intended to measure whether people generally discuss their vote choices with others, rather than whether

⁵⁶ See also George F. Bishop and Bonnie S. Fisher, ‘“Secret Ballots” and Self-Reports in an Exit-Poll Experiment’, *Public Opinion Quarterly*, 59 (1995), 568–88.

they specifically intended to share their 2008 presidential vote choice, given the context of the survey, responses may have been coloured by respondents' expectations about their discussions about the upcoming presidential election.

Ultimately, future research should examine natural, field or laboratory experiments that produce exogenous variation in social and psychological secrecy. This type of research design could address these questions related to the direction of causality as well as concerns about omitted variable bias. Additionally, in the analysis presented here we relied on batteries of questions that yielded measures of individual perceptions about the general secrecy of the ballot and social secrecy related to close friends and family members. These measures do not allow us to pinpoint individual level sources of social pressure and, therefore, may underestimate the consequences of perceptions of ballot secrecy. Questions that ask people to state with exactly whom they typically discuss political matters (for example, whether they are asked about their choices at work) and whether they tend to agree with these discussants on political matters would provide a richer understanding of how the dynamics suggested by our analysis work and allow for more precise estimates of the relationships between social and psychological ballot secrecy and voting behaviour. Beyond these potential refinements, our findings point to three promising avenues for further research on the nature and consequences of ballot secrecy perceptions.

First, our results show widespread doubt about the secrecy of the ballot in the United States. In addition to their effects on voting decisions, these doubts may decrease perceptions of institutional fairness and legitimacy. Future research should investigate what types of institutional changes might mitigate these doubts. As suggested above, some types of voting technology may give people greater confidence that their choices are kept secret (just as some technologies appear to affect beliefs that votes are fairly counted).⁵⁷ These mass beliefs may or may not comport with the opinions of experts on the relative secrecy and reliability of different balloting technologies.

Secondly, beyond formal changes to the structure of the voting process, researchers should consider how somewhat more peripheral aspects of the voting process affect perceptions of secrecy. Partisan poll watchers (tellers), for example, may lead people to believe that party officials are monitoring their choices and, perhaps, sharing this information with others. In contrast, non-partisan election observers may not have this effect. Another possibility is that any election monitor – partisan or not – erodes voters' confidence that their choices are kept secret. As our findings show, factors that affect whether or not people believe their choices are kept confidential may have substantial implications for voting decisions. Understanding these differences is important, particularly in light of efforts to reduce fraud and abuse through the deployment of international election monitors during elections in many developing countries.⁵⁸

Finally, researchers should examine how the relative importance of ballot secrecy varies across individuals and contexts. Our results show that the effects of social and psychological ballot secrecy vary across individuals (such as by union membership). However, these findings may only be the tip of the iceberg. An array of other individual characteristics and contextual factors may moderate the relationships between ballot secrecy and voting behaviour. For example, people who live in relatively homogeneous communities and share their neighbours' political preferences may be more likely to vote

⁵⁷ Alvarez, Hall and Llewellyn, 'Are Americans Confident Their Ballots Are Counted?'

⁵⁸ Susan Hyde, 'The Observer Effect in International Politics: Evidence from a Natural Experiment', *World Politics*, 60 (2007), 37–63.

if they believe their choices will be revealed, whereas those in heterogeneous communities with similar beliefs may be less likely to turn out.⁵⁹

Overall, understanding the way in which citizens perceive the voting process as either a more secret or more social act provides important insights for understanding citizen participation. We show that which candidates citizens choose to support is not only tied to personal and private concerns, but also to social and formal pressures that are realized when individuals anticipate others monitor or will learn of their behaviour.

⁵⁹ See also Christopher F. Karpowitz, J. Quin Monson, Lindsay Nielson, Kelly D. Patterson and Steven A. Snell, 'Political Norms and the Private Act of Voting', *Public Opinion Quarterly*, 75 (2011), 659–85.