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Psychologically-based voting with uncertainty

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ABSTRACT

We analyse a psychologically-based model of voter turnout in an election with common value and uncertainty about who the best candidate is. Potential voters' behaviour is based on anticipated regret, where voters will experience regret if they fail to vote or vote for the wrong candidate. Furthermore, such regret is stronger when the margin of victory is smaller. We characterize mixed and pure-strategy equilibria, which can be desirable, where the right candidate is always elected in all states, or undesirable, where the wrong candidate is elected in some state. Our model yields distinctive comparative statics results. First, an increase in the proportion of informed citizens may cause the winning margin for the right candidate to either rise or fall, depending on the type of equilibrium. In addition, such an increase can have a non-monotonic effect on turnout of uninformed citizens. Second, as the prior becomes more favourable towards the ex ante favoured candidate, turnouts of informed and uninformed voters both change in a non-monotonic way. Furthermore, total turnout can be positively or negatively correlated with winning margins. The distinctive implications of our model could be tested using experimental or empirical studies. In addition, given its inclusion of uncertainty, our model can be used to study, in future research, information provision and acquisition as well as other policy questions.

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1. Introduction

Elections are a cornerstone of democracy. How people vote and who go to vote determine how representative the electoral outcome is of preferences of the citizenry. Despite the unanimity in the economics and political science literature about the importance of understanding what motivates participation and voting in elections, this issue remains largely unresolved and is a subject of a huge open debate. It is equally important to have a theoretical model of turnout in order to perform analysis on how voters' behaviour and election outcomes change according to the level of informedness of the electorate. In this paper, we build on our previous work (Degan and Merlo, 2011; Li and Majumdar, 2010) and offer a model of voter turnout based on regret. Our aim is to provide a tractable framework, taking advantage of evidence from psychological studies on decision making and stylized facts about voter turnout. Our model generates distinctive potentially testable implications and can be used in future research to study information provision and acquisition as well as different policy questions.

The standard "rational choice" approach to voter turnout, represented by the pivotal-voter model (see, e.g., Borgers, 2004; Downs, 1957; Feddersen and Pesendorfer, 1996; Ledyard, 1982; Palfrey and Rosenthal, 1985) has apparently been rejected by empirical and experimental evidence in a variety of dimensions (see, e.g., Agranov et al., 2013; Coate et al., 2008; Levine and Palfrey, 2007). As a

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response, models of turnout have been developed that have deviated from the assumption that individuals are fully rational and take only into consideration the probability of being pivotal when deciding whether and how to cast a vote. All alternative approaches, which take away the assumption that individuals vote solely to directly affect the result of the elections, are inevitably based on some behavioural assumption.

Rule or group utilitarian models of turnout (see, e.g., Coate and Conlin, 2004; Feddersen and Sandroni, 2006a; Feddersen and Sandroni, 2006b; Harsanyi, 1980) assume that individuals are ethical in the sense that they follow the rule that if followed by everybody else in the population (or their group) maximizes the welfare of the population (or the group to which they belong). Expressive voting models (see, e.g., Aldrich, 1997; Degan, 2013; Fiorina, 1976; Hillman, 2010; Hillman, 2011; Ortoleva and Snowberg, 2014; Schuessler, 2000) assume that individuals benefit from voting due to the utility they derive from self-expression.[1] Biased-beliefs models (see, e.g., Chaves and Peralta, 2013; Ortoleva and Snowberg, 2014) assume that citizens have one of possible cognitive biases. Chaves and Peralta (2013) assume that citizens are *self-delusive*, in the sense that they believe that an exogenous proportion of like-minded citizen behave like them. Ortoleva and Snowberg (2014) assume that citizens are *overconfident* due to *correlation neglect*. Regret-based theories of voting (see, e.g., Degan and Merlo, 2011; Ferejohn and Fiorina, 1974; Li and Majumdar, 2010) are based on the behavioural assumption that individuals are concerned about making the wrong decision and experience regret if they fail to vote or vote for the wrong option. Ferejohn and Fiorina (1974) postulate that citizens may vote in order to avoid the regret they would experience if they were to abstain in a situation where their vote would have been decisive. So, although their citizens are not able to calculate the probability of being pivotal, they think that their action could affect the result of the election. Li and Majumdar (2010) consider an environment with heterogeneous preferences and certainty where voters experience regret if they fail to vote or vote for the wrong candidate and such regret depends on the margins of victory. Degan and Merlo (2011) consider a context where citizens are uncertain about who the "right" candidate is and incur a psychological cost upon the act of voting associated with the possibility of voting for the wrong candidate. Similar to Li and Majumdar (2010), any instrumental motivation is completely absent.[2,3]

There appears to be empirical support for the common underlying assumptions of regret-based models of voting. For example, CBS News and the New York Times conducted a poll of 1720 Americans during November 10–12, 2000 and found that 55% of those who did not vote regretted not voting in the 2000 U.S. presidential elections. In France, following the surprising elimination of the socialist candidate Lionel Jospin at the hands of the far-right anti-immigration candidate Jean-Marie Le Pen in the first round of the 2002 French presidential election, many French voters regretted their decision not to vote.[4] In these (large) elections, each individual voter's decision would not have affected the outcome of the election, yet voters who did not vote experienced regret afterwards. Similar results are recurrent in a variety of electoral surveys. Degan and Merlo (2011) find that their regret-based model of election is able to explain the observed turnout and voting patterns in U.S. presidential and House elections.

Besides the above-cited evidence specific to behaviour in elections, regret is a widely observed psychological phenomenon (see Landman (1993)). In psychological research, regret has increasingly become recognized as an important factor in decision making.[5] In particular, Pieters and Zeelenberg (2005) provide further evidence of regret with an experiment in the context of a real election. In these elections, each individual's vote is unlikely to affect the outcome of the elections. Though intention–action inconsistencies were Pieters and Zeelenberg's focus, their results also showed that voters who did not vote experienced higher regret than those who did: those who intended to vote but failed to do so experienced the strongest regret among all groups; those who intended not to vote and did not vote (therefore does not commit intention–action inconsistency) nevertheless experienced higher regret than those who intended to vote for *x* and voted for *x* in the election (see Table 1, p. 22 of their paper). Zeelenberg and Pieters (2007) in their "theory of regret regulation" argue that people can experience anticipated regret (Proposition 5) and are likely to experience it when the decision is difficult, when the negative consequences from the decision is experienced soon after the decision, when there is a societal pressure to choose a certain option, and when information about the unchosen option is readily available (Proposition 6 and quoting from Janis and Mann (1977)). In the voting setting, not only typically decisions involve societal pressure (the third criterion above) but, in an election, there is also an overflow of information available about candidates' policies and characteristics (the fourth criterion above).

Some economic and decision theorists have emphasized the role of anticipated regret in decision making (Bell, 1982; Halpen and Pass, 2012; Loomes and Sugden, 1982; Renou and Schlag, 2010). In these models, regret is defined (as in Ferejohn and Fiorina (1974) model) as the payoff difference between what an agent receives and could receive if he chose a different action instead. An agent chooses an action that minimizes the maximum regret in each contingency. This so-called minimax regret approach, when applied to voting, has the benefit of placing relatively low knowledge requirements on each voter. However, it is not apt to modelling informedness of the electorate and is therefore not conducive to policy analysis related to information.

In this paper, we present a model of voter participation and voting in large elections based on regret. As anticipated, our model builds on those of Li and Majumdar (2010) and Degan and Merlo (2011).[6] A key assumption is that potential voters experience regret if they fail to vote or vote for the wrong candidate. Such regret is dependent on who wins the election and what the margin of victory is. In particular, a voter experiences more regret if the "wrong" candidate wins, and experiences more regret if the election outcome is

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[1] Hamlin and Jennings (2011) provide a comprehensive survey of the literature on expressive political behaviour.

[2] For a discussion and justifications of regret-based voting theories see, e.g. Degan and Merlo (2011) and Li and Majumdar (2010).

[3] Merlo (2006) provides a concise survey of the different models of voter turnout, while Schnellenbach and Schubert (2015–in this issue) discuss more of the models with psychological origins.

[4] Financial Times, London, May 4, 2002, p. 09. These two examples are borrowed from Li and Majumdar (2010).

[5] Kahneman and Tversky (1982) are among the first to study regret as a factor in decision making. Roese and Olson (2014) provide an anthology of research in counterfactual thinking, while Roese (2005) writes about the relation between regret and decision making to the general readership.

[6] As do Degan and Merlo (2011), but not Li and Majumdar (2010), we assume that a proportion of citizens are uncertain about who the "right" candidate is.