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Compulsory versus voluntary voting: An experimental study ☆

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ABSTRACT

We report on an experiment comparing compulsory and voluntary voting institutions in a voting game with common preferences. Rational choice theory predicts sharp differences in voter behavior between these two institutions. If voting is compulsory, then voters may find it rational to vote insincerely, i.e., against their private information. If voting is voluntary so that abstention is allowed, then sincere voting in accordance with a voter's private information is always rational while participation may become strategic. We find strong support for these theoretical predictions in our experimental data. Moreover, voters adapt their decisions to the voting institution in place in such a way as to make the group decision accuracy differences between the two voting institutions negligible. The latter finding may serve to rationalize the co-existence of compulsory and voluntary voting institutions in nature.

1. Introduction

Committees and juries often decide on the matters before them by resorting to a vote. In some settings, voting by all members is compulsory, for example, in U.S. federal court, juror abstention in a criminal trial is not allowed and the court can poll each juror about their vote after the verdict has been rendered (Rule 31, U.S. Federal Rules of Criminal Procedure). In other settings, voting is voluntary in that abstention is allowed, for example in certain U.S. state court civil proceedings where unanimity is not required.[1]

The goal of this paper is to experimentally examine whether voters adapt their voting and participation decisions to the voting institution that is in place: compulsory or voluntary voting. The "rational choice" theory of voting posits that the particular voting institution determines the "rules of the game" and that individuals take into account such rules and others' behavior when deciding their vote. The theory predicts sharp qualitative differences in voting behavior between these two institutions, and by and large, our laboratory results are consistent with the theoretical predictions.

The environment we study involves repeated play of an abstract group decision-making task. All group members have identical (common) preferences which yield them a positive payoff only if they correctly identify, via the voting outcome, the unknown, binary state of the world, e.g., jury members wish to convict the guilty and acquit the innocent, or committee

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[1] While less applicable to the small group size environment that we study here, there are also differences in voting requirements for larger-scale elections for political offices. For instance, 29 countries, representing one-quarter of all democracies currently compel their citizens to vote (more accurately, to show up to vote) in political elections, while in most democracies voluntary voting is the norm (Birch, 2009).

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members want to choose the option that is most appropriate to the current state of the world. Prior to voting on the state of the world, each group member receives a private noisy but informative signal regarding the unknown state of the world, e.g., "guilty" or "innocent." This is the environment of the Condorcet Jury Theorem (Condorcet, 1785) which is frequently used to address the efficiency of various compulsory voting mechanisms in aggregating decentralized information. Condorcet assumed that voters would always vote sincerely, i.e., according to their private signal.

The validity of Condorcet's assumption was first questioned by Austen-Smith and Banks (1996) who showed that if voting is compulsory, then rational voters may have incentives to vote *strategically*, i.e., sometimes voting *against* their private information (see also Feddersen and Pesendorfer, 1996, 1997, 1998; Myerson, 1998). On the other hand, Krishna and Morgan (2012, henceforth K–M) have recently shown that if voting is voluntary so that abstention is possible, then in the same common preference, Condorcet jury model, *sincere* voting, i.e., voting in accordance with one's private information, is always rational when voters face private costs of voting. In K–M's voluntary voting framework, participation decisions become strategic and will depend on the private costs of voting (if there are such costs).[2]

Here we fix the voting rule – majority rule – while using the Condorcet jury environment to study the extent of sincere versus strategic voting when voter participation is either voluntary or compulsory. Specifically, we examine whether voluntary voting (allowing for abstention) with or without voting costs suffices to induce *sincere* voting behavior relative to the case of compulsory voting, where some *insincere* (strategic) voting is predicted to occur. We further explore the information aggregation consequences of these different voting mechanisms with the aim of understanding both how and why compulsory and voluntary voting mechanisms coexist in nature.

Under the "rational choice" framework, voters are supposed to perfectly account for the consequences of their voting and/or participation decisions on voting outcomes and the voting decisions of others. The empirical relevance of the rational choice approach to actual voting behavior has been questioned, largely on the basis of field or survey data. Green and Shapiro (1994) were among the earliest to question the empirical relevance of rational choice theory. In a detailed analysis of several election datasets, Blais (2000) shows that existing rational choice theories have only limited power to explain turnout. Matsusaka and Palda (1999) reach similar conclusions in their extensive study of both survey and aggregate data and suggest that turnout decisions appear to be random. Achen and Bartels (2002) show that voting behavior is affected by unrelated events like shark attacks. In another paper Achen and Bartels (2006), the same authors contend that "voters adopt issue positions, adjust their candidate perceptions and invent facts to rationalize decisions they have already made." Drawing extensively on the Survey of Americans and Economists on the Economy, Caplan (2007) demonstrates that voter behavior is driven by systematically biased beliefs.

By contrast, our approach is to test the comparative statics implications of the rational voter theory using laboratory experiments which have several advantages over field studies for addressing the empirical relevance of rational voter model predictions. First, in the laboratory, we can carefully control the information that subjects receive prior to making their participation or voting decisions; such control is generally not possible using field data. Thus we can accurately determine if voters are voting sincerely, i.e., in accordance with their private information, or if they are voting insincerely, i.e., against their private information. Second, in the laboratory we can carefully control and directly observe voting costs which is more difficult to do in the field. Third, in the laboratory, we can implement the theoretical assumption that subjects have common preferences by inducing them to hold such preferences via the payoff function that determines their monetary earnings.[3] Thus by minimizing confounding and extraneous factors, the laboratory environment we adopt provides vacuum tube-like conditions for assessing the rational choice view of how voting behavior should respond to the voting rules in place. If the theoretical predictions do not hold in the sparse and controlled environment of the laboratory, then it seems unlikely that they will hold in the more complex and noisy environment of the real world.

Within the Condorcet jury set-up that we study, the noisy private signals are informative: a guilty (innocent) signal is more likely to be observed in the guilty (innocent) state. However, the two signals have asymmetric precisions. This asymmetry in signal precisions implies that the likelihood of the state being, e.g., innocent, conditional on having received an innocent signal is larger than the likelihood of the other state, e.g., guilty, conditional on having received a guilty signal. In other words, the two signals are differently informative about the two states of the world.

In this environment we study three voting mechanisms. In the compulsory voting mechanism, abstention is not allowed and there is no cost to voting.[4] Under the majority voting rule and given the asymmetry in signal precisions, the unique symmetric, compulsory voting equilibrium prediction is that voters with the more informative signal vote sincerely, according to their signal, while those whose signal is less informative vote against their signal with positive probability. We refer to the latter behavior as *strategic* or *insincere* voting. Under the voluntary mechanism, we consider cases where voting is

[2] Börgers (2004) compares compulsory versus voluntary voting under majority rule in a costly voting model with *private* values; as noted earlier, we study a common values framework. Börgers argues that voters ignore a negative externality generated by their own decision to vote: by voting they decrease the likelihood that other voters are pivotal. Consequently there is over-participation when voting is voluntary; making voting *compulsory* only serves to reduce welfare even further.

[3] Outside of the controlled conditions of the laboratory, preferences might differ greatly across voters; for example, jury members might have differing "thresholds of doubt," so that each requires a varying amount of evidence before s/he could vote to convict. Such a scenario can be modeled as each voter incurring a different magnitude of utility loss from an incorrect decision (as in Feddersen and Pesendorfer, 1998, 1999).

[4] One could add a voting cost to the compulsory voting mechanism but the addition of such a cost would not change the equilibrium prediction in any way.