# Agenda control as a cheap talk game: Theory and experiments with Storable Votes ☆

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## A R T I C L E   I N F O

## A B S T R A C T

The paper studies a committee voting sequentially on a known series of binary proposals. Each member is granted, in addition to a vote for each proposal, a single extra bonus vote – a streamlined version of *Storable Votes*. When the order of the agenda is exogenous, a sufficient condition guarantees the existence of welfare gains, relative to simple majority voting. But is efficiency compromised if a chair controls the order of the agenda? The agenda becomes cheap talk and can be used to transmit information about the chair's priorities. The game has multiple equilibria, differing in the precision of the information transmitted, but the welfare impact is minor, and the comparison to simple majority voting is unchanged. In laboratory experiments, subjects have difficulty identifying the informative strategies, but payoffs are effectively identical to theoretical predictions. The bonus vote matters; the chair's control of the agenda does not.

## 1. Introduction

Consider a group of voters faced with a series of binary decisions, each of which can either pass or fail. Decisions are taken according to the majority of votes cast, but suppose that, in addition to a regular vote for each decision, each voter is endowed with some "bonus votes" that can be spent freely over the different decisions. This is the idea behind *Storable Votes,* a simple voting scheme designed to elicit and reward voters' intensity of preferences. By inducing a voter to cast more votes on decisions he considers relatively more important, storable votes typically increase ex ante welfare, relative to simple majority voting.

One concern that previous work has not addressed is the potential for agenda manipulation. Because storable votes allow voters to modify their "weight" in decision-making by cumulating or reducing the number of votes they cast, control of the

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agenda could be particularly important. The goal of this paper is to take a first step towards the study of storable votes with endogenous agenda.

Because agenda-setting problems are difficult, and the storable votes game quite complex, the paper exploits two simplifications. First, the voting mechanism is streamlined: in addition to their regular votes, agents are endowed with a single indivisible bonus vote to be cast freely over any of the proposals. The analysis shows that when the agenda is fixed, this simplified mechanism can be sufficient to achieve welfare gains over majority voting. More precisely, the paper identifies a simple sufficient condition guaranteeing higher expected utility relative to majority voting. Welfare gains always obtain if the value of the bonus vote, relative to regular votes, is chosen correctly (in practice, is not too large), and either the number of voters is even or large enough, or the differences in intensity of preferences across proposals are important enough.

Suppose now that one of the voters assumes the role of *committee chair* and is granted some agenda power. The second simplification of the paper is to limit such power to the order with which decisions are brought to a vote. At the start of the game, the chair decides and announces the order of the agenda. Would the chair choose the order so as to exhaust other voters' bonus votes before presenting his own favorite proposal? Could he then carry it through the strength of his bonus vote, even with a narrow support and an efficiency loss? And would the efficiency loss be magnified in equilibrium, as the other committee members adjust their own strategies, possibly saving their bonus votes and failing to register their intensity of preferences?

In this framework the agenda's order acquires the character of a cheap talk message: the chair can use it to transmit information about his priorities. In line with the results of the cheap talk literature, the game has multiple equilibria that differ systematically in the precision of the information conveyed. A babbling equilibrium exists, where no information is conveyed, and the game remains identical to the exogenous agenda case. But informative equilibria also exist where, on the basis of their position in the agenda, voters are able to identify decisions over which the chair is sure *not* to cast his bonus vote. When only one such decision is identified, the information is very imprecise; when two are identified, more information is conveyed in equilibrium, and so on up to the fully informative equilibrium where all but one of the decisions are known not to be targets of the chair's bonus vote, and hence the one decision over which the chair casts the bonus vote is identified precisely. The ability of the chair to transmit information, and varying degrees of information, through the order of the agenda alone may seem a bit "too subtle" to have practical implications, but we can interpret the cheap talk message as a norm: it is plausible to think of committees where the chair is known, for example, never to put on the table his highest priority decision first, or second, or last.

In equilibrium, when information is transmitted the chair effectively commits to casting his bonus vote on a subset of decisions only. The commitment is valuable because other voters refrain from competing with the chair's vote, and the chair sees his probability of being pivotal increase on the decisions he cares most about. As a result, the chair's expected utility is higher: the power to set the order of the agenda is valuable. As for the other voters, the impact of the information on their expected utility is less clear-cut: by avoiding competition with the chair, in equilibrium they face higher competition from other non-chair voters on the remaining decisions. The end result is ambiguous, as is the expected aggregate welfare effect. As for the quantitative importance of these effects, precise numerical results for all parameterizations I have studied yield very small magnitudes. Briefly then: granting control of the agenda's order to a chair need not change the game at all, if voters coordinate on the non-informative equilibrium; if the game does change, it is through the transmission of information, with a positive effect on the chair's expected utility, and an ambiguous effect on all other voters. Even then the best guess is that the magnitudes are very small. The welfare comparisons to simple majority voting derived under exogenous agenda carry over with little change when the chair controls the order of proposals.

But would voters be able to identify these rather subtle equilibrium strategies? And if they do not, could the chair's power in fact lead to sensible declines in efficiency? The second part of the paper reports the results of a laboratory experiment where subjects are confronted exactly with the voting game described by the model. Not surprisingly, they have clear difficulties identifying the possible informative role of the agenda order, a hard task, and one made still more difficult by the multiple equilibria. Non-informative equilibrium strategies best explain the observed behaviors, and even then the strategic mistakes are higher than in the simple scenario with exogenous agenda. And yet, and this is the interesting part of the results, realized experimental payoffs track very closely the theoretical predictions of the non-informative equilibrium. In fact, because theoretical predictions are quantitatively very similar across equilibria, experimental payoffs are almost indistinguishable from equilibrium payoffs for any of the equilibria of the experimental parameterization. Even when subjects deviate from equilibrium strategies, they disproportionately cast their bonus vote on their highest intensity proposal, a simple, intuitive course of action sufficient to approximate very closely the equilibrium welfare properties of the voting rule. The robustness of storable votes to strategic mistakes has been a recurrent finding in experimental studies and a strong argument in their favor.

The paper's conclusion is that both in theory and in the experiments, the bonus vote does matter; the chair's control of the agenda does not, at least in the limited form studied here. Stronger conclusions will need to wait, but the paper ends with some discussion of why the insight provided by this simplest agenda game is likely to carry over to more general scenarios.

This study is part of a larger research project studying the theoretical and experimental properties of storable votes. First proposed in Casella (2005) and studied experimentally in Casella et al. (2006, 2008), storable votes resemble *Cumulative Voting*, a voting system used in US corporate boards and local jurisdictions and allowing voters to spread freely across multiple candidates a given total budget of votes. Cumulative voting is designed to increase the representation of minorities