

Consequences of the Secret Ballot and Electronic Voting

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Secret ballots were introduced for public elections in Australia, followed by the U.S., in the latter half of the 19th Century. The ostensible reason for their introduction was to prevent coercion by employers and political parties, who often controlled the printing and distribution of ballots and could thus prevent their supporters from deviating from the “party line” in individual races within a given election, although less benign explanations have been offered (see Heckelman, 2000; and Heckelman & Yates, 2002). In the age of electronic voting, however, many of the conditions that led to ballot secrecy are no longer present in “advanced democracies”, e.g. ballots are now standardized for all voters, and partisans are generally kept from exerting proximal influence in the locations where voting takes place. Electronic voting makes possible a richer variety of decision procedures, more accurate tallying, and greater accessibility for disabled voters. But it also raises new possibilities for fraud, which is made easier by the stipulation that the choices of a given voter must be kept secret (Lehoucq, 2003; Neumann, 1993).

We can distinguish at least four possible levels of ballot secrecy. At its strongest, a vote can be **untraceable**, meaning that a voter's recorded vote cannot be known by anyone including the voter. This violates a condition of ballot verification necessary for satisfying the **principle of accuracy** – that all votes cast are correctly recorded in the tally. A weaker form of secrecy than untraceability is **anonymous** voting, wherein a voter's recorded vote can be known by the voter but not by others, making it possible for the voter to claim (unverifiably) that their vote was misrecorded. As an example of anonymous but not untraceable voting, consider an election in which the results are publicly posted linking each vote to a ballot identification number which is given to the user, but not in a form that can be legally verified (e.g., the voter writes down the ballot ID number before leaving a polling place).

Weaker still is **private** voting, in which a voter can keep their recorded vote a secret but can both know and reveal it to others verifiably. Voting is private but not anonymous, for example, if an official ballot ID receipt is given to each voter, which can be checked against a public listing of votes by ID. This makes it possible for

voters to sell and trade votes. A very weak form of secrecy is **confidential** voting, in which a voter can keep their recorded vote a secret from the general public, but the mapping between voters' identities and their recorded votes is knowable either by one or an ensemble of officials. Weakening secrecy to "confidentiality" makes it possible to audit an election and to satisfy the **principle of legitimacy** (that all recorded votes are legitimately cast), provided that the audit can be trusted, i.e. that the auditors are not corrupt.

Many combinations of assumptions and procedures are compatible with accurate and legitimate tallying. Although numerous clever schemes have been proposed to distribute verification authority and preserve ballot anonymity (e.g. Benaloh & Tuinstra, 1994; Chaum, 2002), however, I argue that full integrity of an election can only be achieved through transparent auditability, which is incompatible with ballot secrecy because it requires common knowledge of the mapping between votes and voters, i.e. **public** voting. Deciding whether to mandate a secret ballot thus involves a tradeoff between integrity and the various supposed advantages of ballot secrecy. The primary advantages of secret ballots appear to be (a) elimination of extrinsic incentives -- vote selling, social pressures, and official favors/reprisals, and (b) reduction of false misvoting/misrecording claims. In addition to its role in undermining election integrity, however, secret voting has a number of other disadvantages compared with public voting:

- It undermines accountability of voters for their choices;
- It discards information that might assist voters with their decisions;
- It reinforces a norm of nonparticipation and apathy regarding political activity;
- It discourages voting by reducing the consequences of participation;
- It encourages a view of voting as an individual choice rather than as a social act; and, of special interest to theorists,
- It reduces the possibility of cooperation across issues, e.g. vote trading that may improve overall welfare.

The full paper will explore these issues in some depth, through the development of a model to assist in evaluating relevant tradeoffs. A conclusion will be that, with modern communication and record keeping, abuses of public voting would be much easier to detect and legally prevent than they were when the secret ballot was instituted, and that the benefits of public voting may therefore outweigh its dangers in many present contexts.

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