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# Consistency and communication in committees

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**Abstract**

We generalize the classical binary Condorcet jury model by introducing a richer state and signal space, thereby generating a concern for consistency in the evaluation of aggregate information. We analyze truth-telling incentives in simultaneous pre-vote communication in heterogeneous committees and find that full pooling of information followed by sincere voting is compatible with a positive probability of ex post conflict in the committee.


*JEL classification:* D72; D82; D83

*Keywords:* Committees; Voting; Information aggregation; Cheap talk

## 1. Introduction

This paper considers a deliberation and voting model in which rich state and signal spaces combine with a binary action space. A committee consisting of privately informed agents with known heterogeneous preferences engages in simultaneous information exchange prior to voting. Our information structure generates a concern for consistency in the aggregation of individual signals; a given signal is interpreted differently depending on how it matches other available evidence. We find that in contrast to the classical model featuring binary state and signal spaces,

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full information sharing and sincere voting can constitute an equilibrium although agents with some probability disagree ex post.

Consider the example of a jury aiming at determining whether a defendant is guilty or innocent. If guilty, he must have committed the crime at one specific point in time, for example on one particular day of a given week. If innocent, he must have been engaged in some activity at the moment of the crime; for example working, watching TV, or doing sports. Different days of the week constitute mutually exclusive variants of the guilty state while different activities constitute mutually exclusive variants of the innocent state.

Jurors gather evidence through a trial hearing which generates private signals. Before deciding whether to acquit or convict, jurors retire to deliberate and share their private signals. Consider two possible scenarios. In the first scenario, half of the jurors received a signal indicating that the defendant committed the crime on Monday, while the other half received a signal indicating that he committed the crime on Wednesday. In the second scenario, all jurors received a signal indicating Monday. The latter scenario is more consistent than the first and therefore provides more convincing evidence of guilt. Jurors do not as such care about the time at which the crime was committed but wish to establish with sufficient certainty whether the defendant is guilty or innocent. More consistent profiles yield stronger evidence.

The core elements of the above description apply to many other situations. Consider a group of investment bankers that contemplates investing in shares of a large manufacturer, e.g. Chrysler. Committee members need to assess whether Chrysler will avoid bankruptcy in the near future. This may happen if either the US Federal State provides a bailout package or if some private company (e.g. Fiat) decides to step in. On the other hand, if Chrysler does go bankrupt, this may happen according to different chapters of the bankruptcy code. Another example is that of a board of directors that seeks to predict whether a Democrat or a Republican will win the next US presidential election. Different Democratic (Republican) candidates constitute different variants of the Democratic (Republican) state.

We incorporate the key features of the above examples into a model of collective decision making. There are two basic states, each of which splits into a set of substates. Each signal is informative with respect to a basic state and a particular substate. In this context, the consistency of signals matters as illustrated above; more consistent signals provide stronger evidence for the corresponding state. Members of a heterogeneous committee communicate via cheap talk before voting on a binary outcome. In contrast to results obtained in the classical binary signal setup,[1] we find that the truthful communication and sincere voting equilibrium (TS equilibrium) is virtually always compatible with a positive probability of ex post conflict among agents.

The intuition for our result comes out clearly when compared to the classical binary signal model.[2] In the latter, in the putative TS equilibrium, pivotality at the communication stage pins down uniquely the information held by remaining committee members. Disagreement about the optimal decision rule implies that there is always at least one agent for whom this pivotal profile implies a suboptimal decision on the equilibrium path. Consequently, this agent profitably deviates and bends the decision rule in his favored direction.

In our model, the set of pivotal profiles is not a singleton anymore: different signal profiles can yield similar posteriors because the conditional probability of guilt depends on two aspects, the total number of signals indicating respectively guilt or innocence as well as the consistency

[1] See Coughlan (2000), Austen-Smith and Feddersen (2006), Meirowitz (2007), Van Weelden (2008).
[2] See in particular Coughlan (2000).