

## Abstract

Assume that voters choose between yes (Y) and no (N) on two related propositions, where YY, for example, signifies voting Y on the first and Y on the second. If a voter's preference order for the four possible combinations is, say,  $YY > NN > YN > NY$ , then this voter's preferences are "dependent," because whether he or she will prefer Y or N on the second proposition depends on whether Y or N is the outcome selected on the first. The fact that 67% of all preference orders are dependent when there are two propositions, and over 99% when there are three propositions, suggests that the simultaneous choices voters must make on referenda are problematic. Specifically, they may cause voters to experience regret, given that they do not have foreknowledge of outcomes on which to condition their choices.

The ability of voters to abstain on a proposition may provide some relief, but abstentions may be counted in different ways. Under "standard aggregation," they do not count—what combination is chosen depends only on which side (Y or N) gets the most votes on each proposition. Two alternative aggregation procedures, "approval aggregation" and "split aggregation," count abstentions as supportive of both sides, though in different ways. Each would have produced a different winning combination from that of standard aggregation on three related environmental propositions on the 1990 California general election ballot, based on the voting behavior of 1.7 million Los Angeles county voters.

Nevertheless, the alternative aggregation procedures do not "solve" the problem of voting on related propositions. Approval voting and the Borda count would enable voters better to express dependent preferences on them, but there remain practical difficulties in determining what "related" means and in limiting the number of combinatorial choices facing voters.