A Replication of 'Condorcet Efficiency and the Behavioral Model of the Vote'

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Adams (1997) proposed a model of a given voter i's policy losses with respect to a given candidate K via the following quadratic loss function

$$P_i(K) = \sum_{j \in m} b_{ij}(x_{ij} - k_j)^2, \tag{1}$$

where a voter's utility is then given as

$$U_i(K) = -\sum_{j \in m} b_{ij}(x_{ij} - k_j)^2 + \mu_{iK}. \tag{2}$$

The policy position of voter i along policy issue j lies at some point in the interval $[0, 1]$. A candidate k holds some policy position within this same interval for policy j. The above equations imply that a voter's policy losses will be minimized, and utility maximized, by selecting the candidate whose policy position is nearest to her own. The coefficients b_{ij} denote the salience of policy j to voter i. If $b_{ij} = 0$ a voter is completely indifferent about candidate k's position on policy j. However, as $b_{ij} \to \infty$, policy j increasingly becomes the most relevant factor determining the utility voter i receives with respect to candidate k. The term μ_{iK} is a random variable that denotes non-policy related reasons voter i may prefer to vote for a given candidate. This random variable is generated from a type I extreme value distribution (also known as a Gumbel distribution). The less salient a given policy is to a given voter, the more a voter's utility is determined by the idiosyncratic motivations captured by μ_{iK}.

Figure 1 shows results from a replication of the simulation used by Adams (1997) to demonstrate how the above model of voter behavior works. Following Adams (1997), I generated 25,001 random policy positions for 25,001 voters along a single policy dimension J, pulling values from a uniform distribution. Adams (1997) further randomly generated policy positions for three candidates (A, B, and C) whose policy positions were .39, .47, and .71, respectively. I use these same candidate positions in my replication. I run 4 simulations, where the same voter and candidate preferences are used across simulations but where b_J is varied. For each simulation I assume that policy J's salience is constant across voters. In the first simulation $b_J = 100$, for the second 20, for the third 3, and for the last 1.

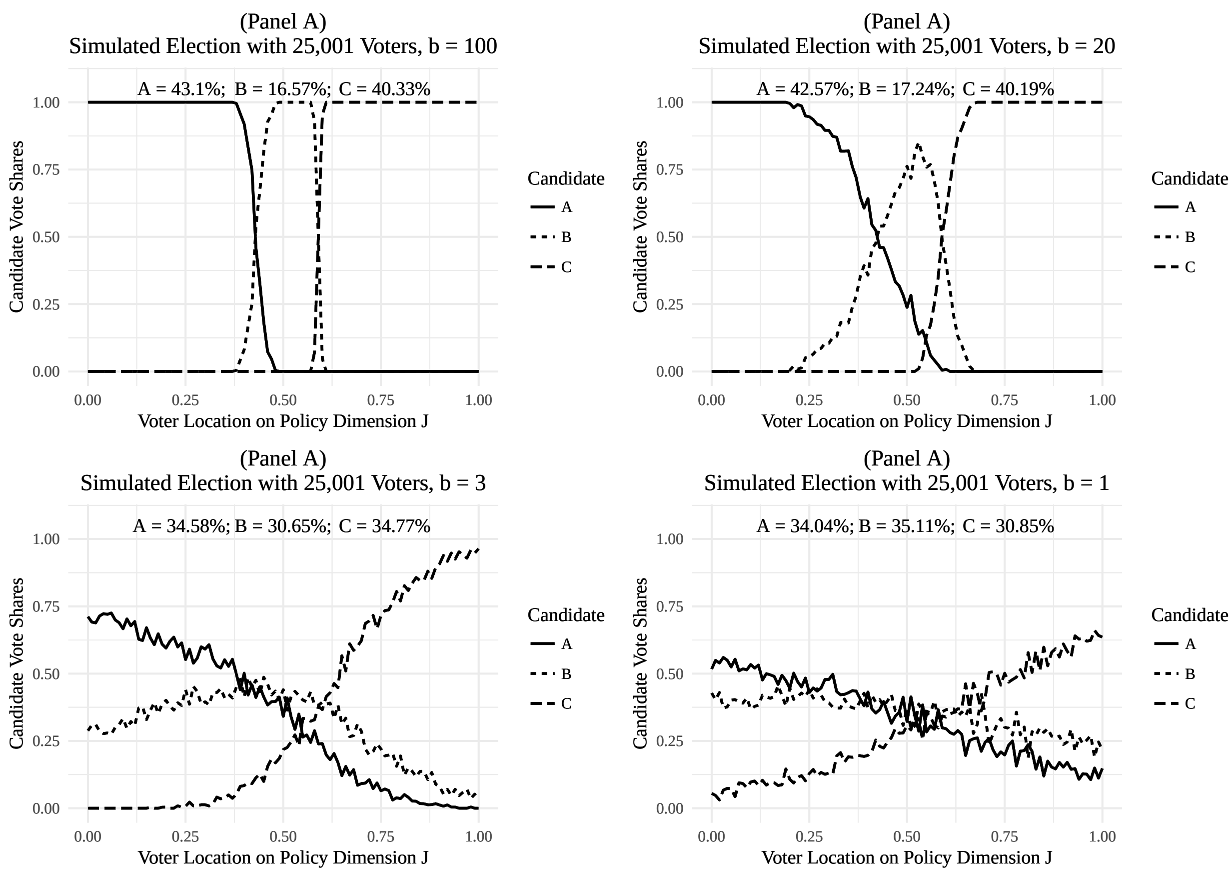

Figure 1: Results from Monte Carlo Simulation of Candidate Vote Shares per Voters' Locations along Policy J.