

Electoral Rules, Mobilization, and Turnout

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Abstract

This essay reviews models of strategic mobilization and turnout, focusing on two important questions about the effects of electoral rules. First, how does the disproportionality of the electoral system affect the variance and mean of mobilization and turnout? This question has been investigated at least since Gosnell (1930). In addition to reviewing the literature, I argue that extant models should pay more explicit attention to secondary mobilization (conducted by interest groups, activists, and ordinary voters). Second, how do electoral rules regulating the electoral calendar and vote fusion affect mobilizational spillovers and, hence, incentives to build mobilizational alliances? This question has attracted less attention from modelers but is well represented in the empirical literature.

INTRODUCTION

Across the developed world, the most abrupt, durable, and significant changes in turnout coincide with changes in electoral rules. For example, a 20% increase in Swiss turnout occurred right after Switzerland's 1919 switch from plurality rule to proportional representation (PR) (Gosnell 1930, p. 126); and a double-digit decline in nonsouthern US turnout followed introduction of the secret ballot in the 1890s and a contemporaneous disaggregation of the electoral calendar (Cox & Kousser 1981, Engstrom 2012, Engstrom & Kernell 2014). These and other examples motivate investigating how different electoral rules affect turnout rates. In this article, I focus on rules that affect turnout indirectly—by changing the incentives of candidates, interest groups, and parties to exert mobilizational effort. Thus, my main concern is with strategic models of mobilization and turnout.

After reviewing a standard model of mobilization, I consider two main issues. First, how does the disproportionality of the electoral system affect (*a*) the cross-sectional variance in mobilization and turnout; (*b*) the cross-temporal variance in mobilization and turnout; and (*c*) the mean level of mobilization and turnout? In this part of the article, my main theme is that extant models should pay more explicit attention to the effort-to-votes mapping in general and to secondary mobilization (conducted by interest groups, activists, and ordinary voters) in particular. The second part of the article focuses on mobilizational spillovers (both across parties and across candidates within a given party). The main point is that various electoral rules—in particular those regulating the electoral calendar and vote fusion—strongly affect such spillovers, which in turn strongly influence the incentives to build mobilizational alliances.

STRATEGIC THEORIES OF MOBILIZATION

Avoiding the Paradox of Voting

After the realization that pivotal voter theories of turnout predict vanishingly small turnout rates in large electorates (Palfrey & Rosenthal 1985), a number of scholars—beginning with Morton (1987, 1991) and Uhlaner (1989)—sought to resolve the “paradox of voting” by highlighting the mobilizational efforts of politicians and interest groups. The gist of the argument was that elite actors might rationally decide to invest in mobilizing voters, and those voters might rationally respond to such mobilization by turning out to vote. Early studies marshaled substantial evidence favoring such an argument. For example, elite mobilizational effort is systematically higher in closer electoral contests,¹ and mobilizational effort is demonstrably effective in boosting turnout.² Thus, it appeared that the paradox of voting could be resolved simply by changing the analytical focus from pivotal voters to pivotal elites.

The main theoretical critique of elite mobilization models has been that they lack micro foundations. That is, they do not explain precisely what elites do and why their followers respond by bearing the costs of participation. To clarify this problem, I begin by articulating a model in which two parties, A and B, compete by mobilizing their supporters. My model is based on Shachar & Nalebuff's (1999), which represents the current state of the art in formal analyses of mobilization.

¹For evidence on the US case, see, e.g., Cox & Munger (1989), Rosenstone & Hansen (1993), Aldrich (1995), and Shachar & Nalebuff (1999). Regarding the UK case, examples include Taylor (1972), Denver & Hands (1974, 1985, 1997), and Fieldhouse et al. (1996). For other cases, see Cox's (1999) review.

²Regarding the US case, observational evidence is provided by, e.g., Key (1950), Dawson & Zinser (1976), Copeland (1983), and Cox & Munger (1989). Field experimental evidence is provided by, e.g., Gerber & Green (1999) and Gerber et al. (2008). In the UK case, observational evidence is provided by the studies cited in footnote 1 and field experimental evidence is provided by, e.g., Bochel & Denver (1971). For other cases, see Cox's (1999) review.

Effort, Votes, and Seats in a Single Contest

Let e_P denote the mobilizational effort exerted by party P ; $V_P(e_P, e_{-P})$ denote P 's vote share, given efforts e_P and e_{-P} ; and $S_P(V_P)$ denote P 's expected seat share, given vote share V_P . Assume that party P chooses its effort level to maximize the expected value of the seats it will win, net of the costs of mobilization:

$$\max_{e_P} S_P[V_P(e_P, e_{-P})]b - c_P(e_P). \quad 0.$$

Here, b is the value of a seat and c_P is a convex increasing function. If there is more than one seat at stake in the contest, then this notation assumes they are all of equal value. This would be true, for example, in a closed-list contest in a multi-member district in which all the offices awarded were legislative seats.

Electoral rules governing the mapping of votes into seats within a given electoral district are said to be more disproportional when they confer a larger bonus on the plurality winner. In principle, electoral rules can overrepresent second-place parties (as in Chile after 1980) or even small parties (as would happen if, for example, Thomas Jefferson's method of apportioning seats in the US House to states were used as an electoral rule). In practice, however, electoral rules vary mostly in terms of how large a bonus they give to the largest party.

In the case of two-party competition, one can write the mapping of votes into expected seat shares using either a generalization of the "cube law" (e.g., Kendall & Stuart 1950, King 1990, Cox & Katz 2002) or a contest success function (e.g., Herrera et al. 2013). The latter can be written as follows (for a case in which there is no bias in the translation of votes to seats):

$$S_P(V_P) = \frac{V_P^\gamma}{V_P^\gamma + (1 - V_P)^\gamma}. \quad 1.$$

Here, the parameter $\gamma \geq 1$ indexes the winner's bonus. If $\gamma = 1$, seat shares equal vote shares. As γ grows without bound, the rule more and more closely approximates winner-take-all.

What about the effort-to-votes mapping, $V_P(e_P, e_{-P})$? Many mobilization theorists, such as Uhlaner (1989), Schram & van Winden (1991) and Cox et al. (1998), argue that a key tactic party leaders employ to get out the vote is the orchestration of social pressure to vote. As Shachar & Nalebuff (1999, p. 535) put it: "We believe the social pressure is very important. There is a contagion effect. The more people in a social network that encourage a person to vote, the more likely that person is to vote and to encourage others to do the same."

Despite their allusions to social pressure, state-of-the-art mobilization models—such as Shachar & Nalebuff (1999) and Herrera et al. (2013)—employ an assumption that implicitly ignores, or severely restricts, secondary mobilization. In particular, these models assume that parties mobilize all and only supporters whose costs of participation fall below a chosen cost threshold. The most natural interpretation of this assumption is that there is no secondary mobilization at all: Party leaders compensate each of their followers for their respective private costs of participation; all and only compensated voters turn out. An alternative interpretation is that parties mobilize low-cost supporters who, in turn, pressure only friends with costs of participation below the party's chosen threshold.

My view is that the latter interpretation is untenable, because it assumes common knowledge of voters' private costs of participation. Those who pressure must know whom to pressure. Thus, my view is that mobilization models (and, even more clearly, ethical-voter models) simply ignore secondary mobilization in their formal mechanics.

Ignoring secondary mobilization does not seem justified, however. Both simulations (Fowler 2005) and randomized field experiments (Bond et al. 2012) suggest that secondary mobilization effects are three to five times larger than primary effects. The latter study, for example, randomly

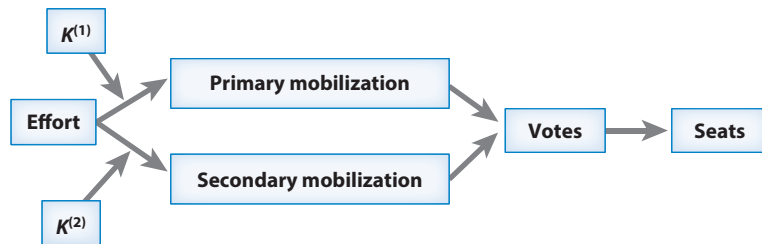


Figure 1

Effort, votes, and seats in a single contest. $K^{(1)}$ and $K^{(2)}$ denote primary and secondary mobilizational capital, respectively.

assigned more than 61 million Facebook users to receive a social-mobilizational message, an informational message, or no message just before the 2010 midterm US elections. Using both reported and validated-vote measures of turnout, they found substantial treatment effects. For example, in the validated-vote component of the study, the “social message increased turnout directly by about 60,000 voters and indirectly through social contagion by another 280,000 voters” (Bond et al. 2012, p. 297). This finding suggests that, just as marketing specialists often design advertising campaigns to spark word-of-mouth communications, so parties would be well advised to design get-out-the-vote campaigns with secondary effects in mind.

In what follows, I assume the effort-to-votes mapping takes the following dual-track form:

$$V_P(e_P, e_{-P}) = V_P^{(0)} + V_P^{(1)}(e_P, e_{-P}; K_P^{(1)}) + V_P^{(2)}(e_P, e_{-P}; K_P^{(2)}). \quad 2.$$

Here, $V_P^{(0)}$ denotes the vote share P would receive if $e_P = 0$; $V_P^{(1)}(e_P, e_{-P}; K_P^{(1)})$ denotes the increment to P 's vote share due to the primary mobilization fueled by effort e_P ; and $V_P^{(2)}(e_P, e_{-P}; K_P^{(2)})$ denotes the increment to P 's vote share due to secondary mobilization sparked by effort e_P .

The intuition behind Equation 2, diagrammed in **Figure 1**, is that each party directly contacts some number of its supporters. These directly contacted individuals increase their own probability of turning out (primary mobilization). Contacted individuals also send the party's mobilizational message through their respective social networks or otherwise influence the turnout rate of their family and friends (secondary mobilization).

Mobilizational effort can be thought of as a kind of labor and, as in other contexts, labor combines with capital to produce its intended effects. In the present context, each kind of mobilization—primary and secondary—depends on somewhat different kinds of mobilizational capital.

The efficacy of primary mobilization depends on capital assets such as databases indicating whom to contact, how to contact them, and what inducements to offer. I indicate party P 's endowment of such assets by $K_P^{(1)}$.

The efficacy of secondary mobilization depends on features of the social networks that party P 's primary contacts might activate. For example, the vote yield of secondary mobilization depends on the degree to which the social networks of P 's supporters are contained within the district; I call this the district-network overlap. Vote yields also depend on whether P 's supporters are formally organized into groups to which P can subcontract mobilizational duties in exchange for policy benefits. The term $K_P^{(2)}$ in **Figure 1** represents P 's endowment of capital assets that help produce a bigger secondary-mobilization bang for the mobilizational-effort buck. (**Figure 1** does not attempt to reflect the fact that secondary effects occur “later than” and “through” primary effects.)

The Marginal Benefit of Effort

The main purpose of the “all and only” assumption employed in current models is to ensure (weakly, globally) diminishing marginal returns to effort. When the marginal return to effort (in vote share) is monotonically diminishing, it is easier to expose how different votes-to-seats mappings affect mobilization and turnout, which is the main analytic focus of current models.

However, the main tactics that political parties use to mobilize votes all entail important returns to scale. To illustrate this point, consider three concrete examples: transportation subsidies, the provision of social benefits tied to the act of voting, and the subcontracting of mobilization to affiliated interest groups.

Parties that provide transportation subsidies to their followers often face increasing returns to scale. In nineteenth-century America, for example, the price to hire a fleet of stagecoaches would be lower per passenger than the price to arrange a horse for each person. Relatedly, transportation subsidies plausibly violate the assumption that all and only supporters with costs below a fixed threshold will participate. Voters with high private costs in areas where it is cheap to organize transportation might vote, whereas those with low private costs in areas where it is costly to arrange transportation might abstain.

Parties can manipulate not only the costs of participation but also the act-contingent benefits. In nineteenth-century America, copartisans in a given county would often be entertained at the polling place with sporting events, pot-luck meals, pole-raising, and so forth (cf. Cox & Kousser 1981). Such social events imposed minimal costs on the parties. Moreover, the more supporters who planned to attend polling-place festivities, the more valuable the anticipated business and social networking opportunities became. Indeed, to the extent that social events were network goods, several conclusions follow: (a) the effort-to-votes mapping would exhibit increasing returns to scale; (b) high turnout could become a self-fulfilling prophecy; and (c) another possible violation of the “all and only” assumption would arise (high-cost social butterflies vote, low-cost social misfits abstain).³

Parties can also effectively pay affiliated interest groups to mobilize their own members. I call this subcontracting. Powell (1980) views subcontracting (which he calls “linkage”) as the key to why turnout is higher in PR than in single-member district (SMD) systems. His account might be reconstructed as follows. First, a political party will pay a subcontractor only if the group’s mobilized members have a sufficiently high probability of voting for the party. Second, if the group’s partisan loyalty is high enough, then subcontracting is more efficient than direct mobilization by party personnel. Third, the probability that any given interest group’s members will have high loyalty to a particular party is higher under PR than under SMD. If one accepts these premises, one expects more subcontracting and higher turnout in PR systems than in SMD systems.

The third premise, which holds that interest groups tend to “nest” within parties more completely in PR systems than in SMD systems, seems defensible (cf. Poguntke 2006). However, here I simply note that standard models of mobilization exclude such a possibility by fiat. In these models (and the one sketched above), voters come in pure types wholly loyal to a particular party. Thus, no party need worry that its mobilizational effort will turn out a citizen who will then vote for a competitor. In other words, the standard models assume zero mobilizational spillovers and hold this feature constant when comparing different electoral systems.

If we think subcontracts require some minimum effort to arrange, then they too imply a violation of diminishing marginal returns to effort. Relatedly, subcontracts can violate the “all and

³These observations suggest a model with multiple equilibria. The clearest example of such a multiple-equilibrium approach to turnout in the literature is discussed briefly below (Abrams et al. 2011).

only” assumption, if high-cost members of affiliated groups vote and low-cost supporters who are not members of any affiliated group abstain.

Why Voters Respond to Mobilizational Effort

Why is it rational for voters to respond to mobilizational effort by turning out? There are various plausible reasons, of which I mention two.

First, participating in elections might be rational for individual voters because they anticipate act-contingent benefits derived from social networking. Abrams et al. (2011) formally develop an argument of this kind. In their analysis, turning out is a requirement for maintaining “good standing” in some social networks. Moreover, network participants are sometimes willing to impose penalties on one another for nonvoting, even if the act of penalizing is itself costly. In their high-turnout equilibrium, the incurred costs of sanctioning nonvoting are small, because relatively few members of the network choose not to vote. Although Abrams et al. focus on informal social networks, the basic logic of their model works *a fortiori* for organized interest groups.

Another mobilizational tactic to which voters might rationally respond is represented by the common nineteenth-century American practice of awarding prizes to “banner districts”—that is, those turning out the biggest vote for a particular party. Such schemes offered club goods to geographically defined groups, rather than private goods to individuals. Schwartz (1987) and Smith & Bueno de Mesquita (2012) have explored such incentives formally, arguing that they can cost-effectively generate high levels of turnout.

Effort, Votes, and Seats When There Are Multiple Contests

General elections consist of a number of distinct electoral contests held on the same day. Parties’ mobilizational incentives in general elections depend on how mobilization in one contest affects other contests, and on partisan organization to internalize those externalities.

Figure 2, which becomes relevant when I discuss mobilizational spillovers, illustrates a general election. It looks much like **Figure 1** except that a single vote share and a single seat share are replaced by a vector of vote shares and a vector of seat shares.

Rules

Electoral rules can affect many of the features displayed in **Figures 1** and **2**. First, rules can affect a party’s endowments of both primary ($K^{(1)}$) and secondary ($K^{(2)}$) mobilizational capital. For example, as the geographic size of districts declines, district–network overlap weakly declines,

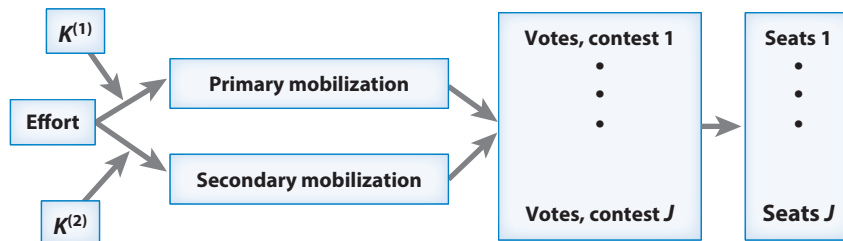


Figure 2

Effort, votes, and seats in multiple contests. $K^{(1)}$ and $K^{(2)}$ denote primary and secondary mobilizational capital, respectively.

reducing $K^{(2)}$. Second, rules can strongly affect the external benefits of mobilization. For example, the number of separate contests held concurrently—how “general” or “decisive” general elections are—affects such benefits. Third, rules can determine the disproportionality of the votes-to-seats mapping. For example, plurality rule in SMDs (with no upper tiers) is one way to produce a winner-take-all system.

DISPROPORTIONALITY INCREASES THE VARIANCE OF TURNOUT

Gosnell (1930) long ago noticed that turnout varied more substantially across SMDs in majoritarian electoral systems than it did across multi-member districts in PR systems. Cox (1999) sketched a decision-theoretic explanation of Gosnell’s observation, arguing that mobilizational effort should be high in closely contested single-seat districts, intermediate in multi-seat districts operating under PR, and low in lopsided single-seat districts. The logic behind this conjecture (p. 398) hinged on the value of a marginal vote in increasing a party’s expected seat share. In closely contested winner-take-all elections, an additional vote can make the difference between losing and winning. In lopsided winner-take-all elections, in contrast, an additional vote has almost no chance of affecting the outcome. Finally, in perfectly proportional elections, each additional vote slightly increases a party’s expected seat share. Thus, one expects mobilization levels in PR districts to be intermediate between those in close and lopsided majoritarian districts.

Herrera et al. (2013) have formally derived Cox’s conjecture within a game-theoretic model of elite mobilization in a two-party polity. From a game-theoretic perspective, the analyst has to consider whether smaller parties will face less daunting free-rider problems than their larger competitors and thus be able to mobilize a higher fraction of their supporters in equilibrium. Cox’s conjecture implicitly relies on such “underdog compensation” effects being small enough.

To explain Herrera et al.’s model—which generalizes both strategic mobilization (e.g., Shachar & Nalebuff 1999) and ethical voter (e.g., Feddersen & Sandroni 2006) models—suppose that voters come in two types, with a proportion q supporting party A and $1 - q$ supporting party B. Each individual voter bears a non-negative private cost of participation. Party A (or B), however, can mobilize all its supporters whose cost of participation falls below a chosen threshold, c_α (or for party B, c_β). The cost of such mobilization is given by a convex increasing function, $\lambda(c_\alpha)$ [for party B, $\lambda(c_\beta)$]. If a share α of party A’s supporters and a share β of party B’s supporters participate in the election, then the turnout rate will be $T = q\alpha + (1-q)\beta$.

Holding the cost-of-mobilization curve (λ) and the partisan breakdown of the electorate (q) constant, consider two different ways of conducting an election: one in which the winner takes all and one in which seats are allocated in perfect proportion to votes. In the winner-take-all case, if $q = 1/2$, then (in the limit as the expected number of voters grows) the marginal benefit to party A (or B) of raising the threshold c_α (or c_β) is “high.” However, if $q \neq 1/2$, then (in the limit) the marginal benefit is nil. In the perfect PR case, the marginal benefit of raising the level of mobilization depends less on q . Regardless of the breakdown of the electorate, a marginal vote yields a positive finite increment in expected seats. Putting these results together, Herrera et al. (2013) show that turnout is highest in winner-take-all elections in which the two parties are evenly matched ($q = 1/2$), intermediate in proportional elections (regardless of q), and lowest in winner-take-all elections in which the two parties are not evenly matched ($q \neq 1/2$). As for the underdog compensation effect, Herrera et al. show that it is nil under their stated assumptions.

Cross-Sectional Variance

With some additional notation, one can use Herrera et al.’s (2013) results to say how turnout should vary cross-sectionally in different electoral systems. In particular, consider an electoral

system with n districts, each of magnitude m , all operating under the d'Hondt method of PR. The proportion supporting party A in district j is q_j , with the remaining $1 - q_j$ supporting B. If a share α_j of party A's supporters and a share β_j of party B's supporters participate in the election in district j , then the turnout rate in district j will be $T_j = q_j\alpha_j + (1 - q_j)\beta_j$. Assuming all districts have equal numbers of registered voters, the nationwide turnout rate will be $T = \frac{1}{n} \sum_j T_j$.

Holding fixed the number of districts (n), the electoral rule (d'Hondt), the distribution of partisan support [$q = (q_1, \dots, q_n)$], and each party's cost-of-mobilization function (λ), let us compare turnout rates in two polar cases. At one extreme, $m = 1$. In this case, d'Hondt is equivalent to winner-take-all. At another extreme, $m = \bar{m}$, where \bar{m} is defined such that whenever $m \geq \bar{m}$, the translation of votes into expected seats by the d'Hondt rule deviates negligibly from perfect proportionality.

Let the marginal benefit of mobilizing a vote in district j , for given m and q_j , be denoted $MB(m, q_j)$. From Herrera et al. (2013), we know that (for large enough electorates) $MB(1, 1/2) > MB(\bar{m}, k) > MB(1, b)$ for all $(k, b) \in (0, 1)$ such that $b \neq 1/2$. Denote the cross-district variance in the marginal benefit, given m , by $\text{Var}_{MB}(m) = \text{var}\{MB(m, q_j): 1 \leq j \leq n\}$. Similarly, let the cross-district variance in mobilization be $\text{Var}_M(m) = \text{var}\{M(m, q_j): 1 \leq j \leq n\}$ and the cross-district variance in turnout be $\text{Var}_T(m) = \text{var}\{T(m, q_j): 1 \leq j \leq n\}$. Here, $M(m, q_j)$ stands for the equilibrium mobilization rate, given m and q_j ; and $T(m, q_j)$ stands for the equilibrium turnout rate, given m and q_j .

With this notation, one can state the following cross-sectional variance hypothesis:

Suppose there exist both "swing" districts (j such that $q_j = 1/2$) and "safe" districts (j such that $q_j \neq 1/2$). Then

- (a) $0 = \text{Var}_{MB}(\bar{m}) < \text{Var}_{MB}(1)$;
- (b) $0 = \text{Var}_M(\bar{m}) < \text{Var}_M(1)$; and
- (c) $0 = \text{Var}_T(\bar{m}) < \text{Var}_T(1)$.

In words, the cross-district variances in the marginal benefit of mobilizing a vote, mobilization, and turnout are all nil in a pure PR system but positive in a majoritarian system in which both swing and safe districts exist. Results *b* and *c* support Cox's conjecture that "the cross-sectional variance in mobilization and turnout should be higher in single-member plurality systems than in multimember PR systems" (1999, p. 398).

Countries adopting more proportional rules typically keep the size of their assemblies roughly constant and reduce the number of districts. Thus, the comparison above (which held the number of districts constant and allowed assembly size to increase) is not necessarily the most natural one to make. However, if we compare a majoritarian electoral system with n one-seat districts to a PR electoral system with one n -seat district, the same conclusions about variance emerge (when $n \geq \bar{m}$).

Cross-Temporal Variance

As far as I know, no one has explicitly discussed how turnout should vary across time as a function of electoral rules. With some additional notation, one can apply Herrera et al.'s (2013) results to this issue as well.

Continuing to consider two parties competing in an electoral system with n m -seat districts operating under the d'Hondt method of PR, let the proportion supporting party A in district j at time t be q_{jt} , and assume $\{q_{jt}: t = 1, 2, \dots\}$ are independent draws from a fixed district-specific distribution. Let $\kappa_j = \Pr[q_{jt} = 1/2]$ be the probability that district j experiences a close contest. If $\kappa_j \in (0, 1)$ and $\tau \geq 2$, then $E[\text{var}\{M(1, q_{jt}): 1 \leq t \leq \tau\}] > E[\text{var}\{M(\bar{m}, q_{jt}): 1 \leq t \leq \tau\}]$. That is, for a given district, the expected variance in mobilization across a sample of τ elections is higher when

the electoral rules are more disproportional. A similar result holds both for the marginal benefit of a vote and for turnout.

Scope Limitations of the Cross-Sectional Variance Hypothesis

The cross-sectional variance hypothesis (henceforth, the variance hypothesis) assumes that the district elections held in SMD systems are truly district specific. Two important violations of this assumption are upper tiers and concurrent executive elections.

To illustrate the first violation, suppose that votes cast in a set of primary electoral districts are counted in an upper tier encompassing them all, with seat allocations occurring at both levels. In this case, the marginal benefit of mobilizing a bloc of votes in any given district will have two components. The mobilized bloc may prove decisive in winning a marginal seat within the district (yielding a district-specific benefit), but it may also prove decisive in winning a marginal seat within the upper tier (yielding a tier-specific benefit). Thus, upper tiers tend to equalize the marginal value of mobilization across all the districts they contain (and the equalization is more complete as the share of seats allocated in the upper tier increases).

Concurrent competition for executive office can induce a similar equalization of marginal benefits across districts. In the United States, for example, the value of mobilization is partially equalized across the legislative districts within a given state, if that state is itself closely contested at the presidential level *and* most voters cast straight party ballots. For, in this case, the presidential candidates may increase mobilization and turnout throughout the state, thereby lessening the cross-district variability that would otherwise have been observed.

Another obvious scope limit of the variance hypothesis concerns compulsory voting. If voting is compulsory, one should expect little turnout variance across districts regardless of how disproportional the electoral rules are.

Relaxing “All and Only”

The “all and only” assumption does not seem essential to establish the variance hypothesis. Intuitively, all one needs is that the marginal return in vote share to effort is not too different under PR and SMD systems (in equilibrium). This would allow the clear differences between the two systems’ votes-to-seats mappings to drive the result. In other words, were one to augment the model in Equations 0–2 with an appropriate “not-too-different” assumption, the variance hypothesis would still hold.

DOES DISPROPORTIONALITY INCREASE CROSS-DISTRICT TURNOUT VARIANCE?

Most empirical studies of the variance hypothesis rely on cross-sectional data. For example, Cox et al. (1998) report that the cross-district variance of turnout decreased monotonically with district magnitude in Japanese Diet elections over the period 1955–1993. Similar within-country results have been reported for Switzerland and Spain (Grofman & Selb 2009, 2011).

Selb (2009), using data on “3,194 electoral districts observed in 31 national elections in 20 countries” (all but five from western Europe), documents several patterns. First, district-level deviations from the national mean turnout rate increase with disproportionality (as measured by the district-specific threshold of exclusion). Second, in a heteroscedastic regression model that allowed each of the first two moments of district-specific turnout to be a function of disproportionality, he finds significant effects on both counts. Districts operating under more disproportional rules had lower expected turnout and higher turnout variance.

Table 1 Cross-temporal variance in turnout and electoral rules^a

Regressor	Coefficient (standard error)
Constant	9.5 ^b (0.94)
Proportional Representation	-2.5 ^b (0.77)
Upper Tier	-1.4 ^c (0.76)
Compulsory Voting	-1.4 ^c (0.72)

^aN = 635. Adjusted R² = 0.05.

^bSignificant at the 0.01 level.

^cSignificant at the 0.10 level.

Recent laboratory experiments have also explored the relationship between disproportionality and turnout (see Herrera et al. 2013 for a review). These experiments deal with small enough sets of voters (lab subjects) that they can and do ignore mobilization by pivotal elites in order to focus on strategic participation by pivotal voters. Collectively, they lend substantial support to parts *a* and *c* of a pivotal voters version of the variance hypothesis.

DOES DISPROPORTIONALITY INCREASE OVER-TIME TURNOUT VARIANCE?

I am not aware of studies that examine whether disproportionality increases turnout variance over time. One approach is to examine the absolute change in national turnout rates from election to election in different systems. Let $\Delta T_{jt} = |Turnout_{jt} - Turnout_{j,t-1}|$, where *j* indexes countries and *t* indexes elections in each country. Let $PR_{jt} = 1$ if election *jt* was held under PR rules; $Compulsory_{jt} = 1$ if voting was compulsory in election *jt*; and $UpperTier_{jt} = 1$ if election *jt* featured an upper tier. **Table 1** shows the results of regressing ΔT_{jt} on PR_{jt} , $Compulsory_{jt}$, and $UpperTier_{jt}$ for the sample of countries covered in the International IDEA dataset (available at <http://www.idea.int>).

The analysis focuses on 48 countries that IDEA classifies as either PR or plurality/majority over the postwar era. As can be seen, turnout fluctuations are 9.5 percentage points on average in the plurality/majority countries but 2.5 points (26%) smaller in PR systems. Upper tiers (which occur only in the PR systems) further reduce turnout fluctuations, as does compulsory voting. At a descriptive level, at least, these patterns are consistent with the expectation that turnout should fluctuate more in more disproportional systems.

DISPROPORTIONALITY AND EXPECTED TURNOUT

Most scholars have claimed that disproportionality depresses expected turnout. In this section, I first review the main rationale offered for this claim, before offering some others.

Higher Cross-Sectional Variance Lowers Turnout

Some (e.g., Powell 1986, Blais & Dobrzynska 1998, Selb 2009) have argued that the greater cross-sectional variability of mobilization and turnout in SMD systems should lower the expected levels of mobilization and turnout. Powell (1986, p. 21), for example, argues that nationwide districts should enhance turnout because “parties . . . have equal incentive to get voters to the polls in all parts of the country.” If we denote expected mobilization (turnout) in a nation using

SMDs and plurality rule by $M_{SMD}(T_{SMD})$ and expected mobilization in a nation using PR in a single nationwide district by $M_{PR}(T_{PR})$, then Powell's claim can be stated as follows:

The mean hypothesis: (a) $M_{SMD} < M_{PR}$; (b) $T_{SMD} < T_{PR}$.

This hypothesis, it should be noted, requires assuming that safe districts are sufficiently common in SMD systems, because turnout in SMD systems is a weighted average of turnout in safe and close districts: $T_{SMD} = \kappa T_{SMD}^{close} + (1 - \kappa) T_{SMD}^{-close}$, where $\kappa = \#\{j: q_j = 1/2\}/n$ is the proportion of close districts, $T_{SMD}^{close} = E[T(1, q_j) | q_j = 1/2]$ and $T_{SMD}^{-close} = E[T(1, q_j) | q_j \neq 1/2]$. If we let $\bar{\kappa}$ be a share of close districts high enough to equate the overall turnout rates in SMD and PR systems [i.e., $\bar{\kappa}$ is such that $T_{PR} = \bar{\kappa} T_{SMD}^{close} + (1 - \bar{\kappa}) T_{SMD}^{-close}$], then the (implicit) assumption made by those who predict higher mobilization and turnout in PR systems is that close districts are sufficiently rare, in the sense that $\kappa < \bar{\kappa}$. Because the proportion of close districts can vary (due, e.g., to residential segregation and gerrymandering) and the precise values of T_{SMD}^{close} , T_{PR} , and T_{SMD}^{-close} depend on noninstitutional parameters, it is not clear that the higher variance in SMD systems allows us to conclude that all SMD systems will have lower turnout than all PR systems.

Higher Cross-Temporal Variance Lowers Turnout

PR systems also encourage parties and their interest group allies to invest in more mobilizational capital than would be profitable in SMD systems. Consider, for example, whether it makes sense to establish and maintain a phone bank. Such an investment is pointless in a safe SMD. In a district that is competitive in a particular election ($q_{jt} = 1/2$), a phone bank might be constructed from the ground up but then allowed to atrophy after the campaign ends. Only in SMDs that will foreseeably be closely contested for several election cycles would it make sense to establish and maintain a phone bank (or other capital asset). In contrast, PR systems promise stable marginal returns from mobilization into the indefinite future. They thus motivate investment in more mobilizational capital.

I am not aware of any systematic empirical explorations of this hypothesis. One kind of "capital asset" in which parties might invest is its members. Recruiting them takes effort, and party leaders must hope recruits will remain members—paying dues and providing campaign assistance—for a long time.

If we view total dues-paying membership as a kind of capital asset, then **Figure 3** suggests that investments in this asset respond to the structure of the electoral system. The box-and-whisker plots show that party membership (from Webb et al. 2002) is lowest in the four countries with SMDs; intermediate in the four countries with district magnitudes between 1 and 10; and highest in the six countries with district magnitudes above 10.

A party's relationships with allied interest groups constitute another kind of capital asset in which it might invest. It has long been said that parties in PR systems more often develop durable alliances with interest groups, which then mobilize their own members (Janda 1980; Powell 1986, pp. 22–23; Radcliff & Davis 2000). That said, quantitative measures of the prevalence of such alliances have proved elusive (Poguntke 2006).

Geographically Small Districts Lower Turnout

Parties operating in systems with geographically small districts should be less willing to mobilize groups with geographically dispersed memberships. To illustrate the point, consider a closely contested district and two groups, G1 and G2, identical in all respects except that the latter is more dispersed. In this case, a larger proportion of G2's secondary mobilization will occur outside the focal district. Thus, the value of mobilizing G2 will be less than the value of mobilizing the more concentrated group, G1. In contrast, parties operating in a system with a nationwide

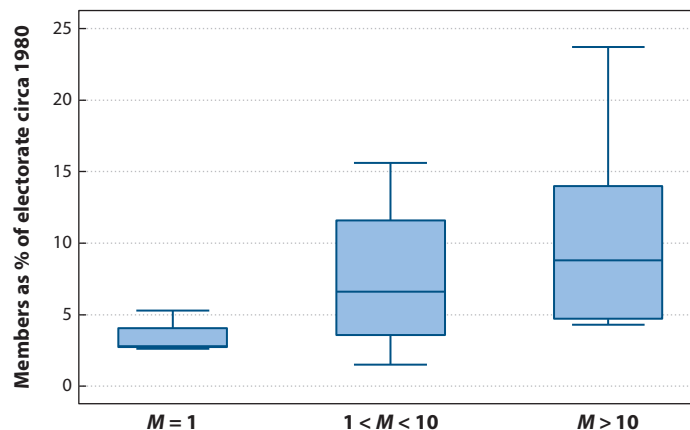


Figure 3

District magnitude and party membership in 14 democracies.

district (or upper tier) will have no electoral incentive to discriminate among groups based on the geographic location of their members. To put it another way, geographically larger districts encourage parties to mobilize a wider array of groups. (I assume the entire network lies within a given country. If not, then parties in PR systems may choose which groups to mobilize based in part on how much each group's social network extends beyond the country's borders.)

A similar point can be made about individual voters. Parties in SMDs have relatively poor incentives to invest in learning about and mobilizing either newly arrived or transient persons. More of the social networks of new and transient persons lie outside the district and, thus, the within-district secondary mobilization sparked by contacting them is on average smaller. Consistent with this observation, turnout in the United States is substantially lower for newly arrived persons; and also for various categories of foreseeably transient persons—e.g., college students and unmarried persons (Rosenstone & Hansen 1993; Brady et al. 1994). In contrast, in systems with nationwide districts (or upper tiers), parties' payoffs from mobilizing new or transient residents differ little from their payoffs from mobilizing long-time residents.

Summary

The discussion above suggests three distinct reasons that turnout should be higher in PR than in SMD systems. First, most districts in SMD systems are uncompetitive (for unspecified reasons), and turnout in such districts is usually low because parties have little incentive to mobilize. Second, parties have poorer incentives to invest in mobilizational capital in SMD systems because the marginal benefit of a vote varies across time. Third, parties have poorer incentives to invest in mobilizing persons and groups with geographically dispersed social networks in SMD systems.

DOES DISPROPORTIONALITY REDUCE MEAN MOBILIZATION AND TURNOUT?

The most common research strategy in empirical studies focusing on the mean hypothesis has been to compare turnout rates in SMD and PR systems in a cross-section of nations (e.g., Powell 1980, Blais & Carty 1990, Blais & Dobrzynska 1998, Franklin 2004). Geys (2006), in a meta-analysis

of 14 such studies, reports that 70% of the estimated correlations between turnout and proportionality are significantly positive.⁴

Several authors have undertaken before-and-after studies at the national level. For example, Gosnell (1930, p. 126) reports that Swiss turnout rose by 20% after a switch from plurality to PR in 1919, Tingsten (1937, pp. 224–25) cites Norway as another country showing markedly increased turnout after adopting PR (in 1921), and Vowles et al. (2006) report very little effect on turnout after New Zealand's conversion from plurality rule to a mixed-member proportional system. Surprisingly, there does not appear to be a systematic review of before-and-after studies. Nor am I aware of attempts to use a difference-in-differences approach at the national level to estimate the turnout effects of electoral reforms.

Another vein of studies examines whether PR boosts turnout in subnational elections. For example, two recent studies (Eggers 2013, Sanz 2013) take advantage of national laws that mandate different electoral systems for local elections, depending on whether municipalities exceed a stipulated population threshold. Such laws, which appear to be common in Europe and its settler colonies, enable regression discontinuity studies that focus on turnout rates in a window centered on the population threshold. Sanz (2013) and Eggers (2013) find that turnout is higher in municipalities using more proportional electoral systems, corroborating findings in earlier correlational studies (e.g., Ladner & Milner 1999, Bowler et al. 2001).

None of the studies cited in this section seek to identify the causal mechanism by which SMD systems reduce turnout. Are there many uncompetitive districts, due to residential segregation, and do they lower mobilization? Are there few long-term mobilizational subcontracts with allied interest groups, because the marginal benefit of mobilization varies over time and/or groups' members do not fit efficiently within the boundaries of competitive electoral districts?

Sour Notes

Some seemingly contradictory findings are presented by Karp et al. (2008), who report that party contacts are far more common in candidate-centered electoral systems than in PR systems. They conclude that “party mobilization . . . cannot explain the higher rates of turnout observed in PR systems” (p. 1). Their conclusion does not necessarily follow from the evidence they present, however. They rely on survey questions asking “whether respondents reported being visited or telephoned by a *political party* [italics added].” If a respondent was lobbied by a friend or neighbor, who had previously been contacted by a party, this secondary mobilization would be missed. So, too, would any mobilization conducted by interest groups affiliated with a particular political party. But secondary and interest group-mediated mobilizational tactics are central components of many parties' overall strategies.

Moreover, such tactics may vary systematically with the electoral system. Powell (1980, 1986) observed that PR seems to encourage parties to form stronger linkages with groups in civil society, and those groups do most of the heavy lifting in boosting turnout. If Powell's conjecture is correct, then parties in PR systems may “subcontract” most of their mobilization to affiliated groups. This would mean that total mobilization—direct contacts by parties, contacts by affiliated interest

⁴Most of the studies surveyed by Geys focus on a relatively small sample of industrialized democracies (two focus on subnational units, a few include larger samples of countries). Within the set of industrialized democracies, the most widely acknowledged exceptions to the general trend are Switzerland (low turnout despite PR) and prereform New Zealand (high turnout despite plurality rule). These exceptions suggest the importance of other variables—for example, the disaggregation of the electoral calendar (high in Switzerland, low in prereform New Zealand). In any event, it should be noted that the studies Geys surveys suffer from all the threats to causal inference that usually beset cross-sectional analyses.

groups, and secondary contacts—might be substantially greater in PR systems, even though direct partisan mobilization is (per Karp et al. 2008) lower.

Other seemingly inconsistent findings are presented in studies that report substantial support for the mean hypothesis in western Europe but little support in developing democracies (cf. Stockemer 2015). Concurrent elections of presidents may help explain these findings. Most countries included in empirical studies of turnout in developing countries are presidential (or semipresidential) systems in which the presidential campaign dominates all others and straight-ticket votes are common (and sometimes even institutionally mandated). Thus, we may fail to find support for the mean hypothesis in developing countries, simply because they more often fall afoul of one of the scope limits of the hypothesis noted above.

DISPROPORTIONALITY, NUMBER OF PARTIES, AND TURNOUT

Grofman & Selb (2009, 2011) have recently documented an interesting empirical pattern. In their samples of multi-member districts (and also in samples of PR-based countries), turnout tends to *decline* with the (effective) number of parties.

This result does not gibe with standard models relying on the “all and only” assumption. As Herrera et al. (2013, pp. 28–30) remark, in their model turnout should *increase* with the number of (symmetric) parties in PR systems. This is because the smaller a party’s vote share is, the more a marginal vote will increase its vote (hence, seat) share.⁵

As parties proliferate, however, their willingness to pay any given group to mobilize its members must eventually decline—and this effort-to-votes effect will generally swamp the votes-to-seats effect just noted. To illustrate, consider a group *G* the vast bulk of whose members currently vote for party *A*. In this situation, *A* has a good incentive to pay *G* for its mobilizational services. Now imagine that *A* splits into two ideologically proximal parties, *A'* and *A''*. In this new situation, neither party has as good an incentive to pay *G* to mobilize, since mobilized members of *G* will split their votes between the two (ideologically similar) parties. In other words, in PR systems turnout should decline with the effective number of parties, because fewer groups will have memberships that tilt heavily toward any one party, thus reducing the incentive of any one party to pay that group to mobilize. This observation suggests that relaxing the “zero mobilizational spillovers” assumption would be fruitful.

MOBILIZATIONAL SPILLOVER AMONG COPARTISAN CANDIDATES

In this section, I consider another important claim linking electoral rules to mobilization and turnout. Roughly put, the claim is that mobilization and turnout will increase when electoral rules ensure larger mobilizational spillovers among copartisan candidates running for different offices. The relevant rules are mostly those that regulate the electoral calendar (which offices are elected when) and voters’ options on the ballot (whether they can partially abstain or split their tickets).

Single-Member Simple Plurality Elections

To state the claim about mobilizational spillovers more concretely, consider again a country with two parties, *A* and *B*. Voters come in two types—either preferring *A* or *B*.

⁵ Suppose a party gets *z* votes out of a total cast *Z*. If it mobilizes an additional voter, its votes increase to *z* + 1 and the total increases to *Z* + 1. Thus, the increment to its vote share is $(z + 1)/(Z + 1) - z/Z = (Z - z)/Z(Z + 1)$, which declines in *z*.

There are J offices at stake in the election, each elected in a SMD by plurality rule. Each party, $P = A, B$, nominates a single candidate for each office, $j = 1, \dots, J$.

Suppose that candidate j of party P mobilizes $t_{Pj} \geq 0$ voters who prefer party P at a cost $c_{Pj}(t_{Pj})$; and let $t_P = (t_{P1}, \dots, t_{PJ})$. One can interpret t_{Pj} as the total number of type P voters mobilized as a consequence of Pj 's efforts, including any higher-order mobilization that may occur through social networks. (I ignore the possibility that Pj 's efforts mobilize some type $-P$ voters. Allowing for such a possibility would not be too difficult and would not change any of the conclusions reached.)

What will the payoff to candidate Pj be from the mobilization undertaken by all of party P 's candidates? To explore this issue, let $v_{Pj}(t_P)$ denote Pj 's expected vote total, as a function of t_P . We can write $v_{Pj}(t_P) = v_{Pj}(0) + \sum_k \alpha_{kj}^P t_{Pk}$, where 0 denotes a vector of zeroes of length J and α_{kj}^P denotes the expected fraction of the t_{Pk} voters mobilized by candidate Pk that will "spill over" to (i.e., vote for) candidate Pj . All told, Pj 's vote total equals what it would be were no mobilization to occur, namely $v_{Pj}(0)$, plus the sum of mobilizational spillovers that benefit Pj , $\sum_k \alpha_{kj}^P t_{Pk}$.

The probability that a voter mobilized by Pj will actually vote for Pj , α_{jj}^P , need not be unity for two reasons. First, even if Pj succeeds in mobilizing only type P voters who reside in Pj 's district, some of these voters may support Pj 's opponent. The loyalty of type P voters may not be perfect. Second, Pj 's mobilizational efforts may mobilize type P voters who reside in other districts and are not eligible to vote for Pj . (In a more general analysis, it would also be possible that Pj 's efforts mobilize type $-P$ voters.)

The probability that a voter mobilized by candidate Pj will vote for a copartisan candidate Pk , α_{jk}^P , can be decomposed as follows. Let Q_{jk}^P be the probability that a voter mobilized by j will participate in k 's election; and let L_{jk}^P be the probability that the voter will vote for k , conditional on participation. Then we have

$$\alpha_{jk}^P = Q_{jk}^P L_{jk}^P.$$

In other words, the rate at which voters mobilized by one candidate benefit a copartisan depends both on the mobilized voter's participation and on partisan loyalty.

The electoral rules that most powerfully affect spillover rates are those regulating the "fusion" of votes across different contests. At one extreme, some presidential systems employ a fused vote: the voter selecting a presidential candidate is thereby forced to support all the congressional candidates affiliated with that candidate (e.g., in the Dominican Republic) or forced to support the affiliated vice presidential candidate (e.g., in the United States). Uruguay's lemas similarly fuse presidential with congressional votes but allow multiple groups to support any given presidential candidate, providing voters with more choices. The nineteenth-century United States's party-strip ballots, though they did not force voters to support the same party in multiple contests, strongly encouraged such behavior. At the opposite extreme, the office-bloc ballot lists each contest on its own part of the ballot paper and requires that the voter indicate a separate choice for each office. This opens the door to both roll-off (neglecting to vote in particular races) and split-ticket voting (voting for candidates from different parties in different offices).

Much the same spectrum of vote fusion possibilities arises in list systems. At one end are closed lists, which disallow both partial abstention and split-ticket voting. At the opposite end are systems that give voters as many votes to cast as there are seats to be filled but allow both partial abstention and panachage.

Mobilizational Spillover and Mobilizational Incentives

Depending on the spillover rates, $\{\alpha_{bj}^P\}$, gains from trade in mobilizational effort exist among politicians seeking distinct offices under the same party banner. If the candidates of party P make separate decisions about mobilization, then they will undersupply it, because each candidate will fail to account for the external benefits that his own mobilization confers on his copartisans. The collective welfare of the candidates of party P would be enhanced if the mobilization levels of each candidate, $t = (t_{P1}, \dots, t_{PJ})$, were chosen by some central agent to solve the following problem:

$$\max_t \sum_j [S_j(t) - S_j(0)]b_j - c_j(t_j).$$

Here, $S_j(t)$ represents the expected share of the seats at stake in contest j that party P wins, given mobilization t , which implicitly depends on $\{\alpha_{kj}^P: k = 1, \dots, r\}$; b_j represents the value of the offices at stake in contest j ; and $c_j(t_j)$ is the cost of mobilizing t_j voters in contest j .

Because $S_j(t)$ depends on how likely it is that voters mobilized by one candidate will vote for that candidate's copartisans, the optimal mobilizational target for k increases as any of the $\alpha_{kj}^P, j \neq k$, increase. In other words, the larger the external benefits that b 's mobilizational efforts confer on his copartisans, the larger k 's assigned target will be.

More generally, if parties operate as mobilizational alliances that manage to internalize the benefits and costs of mobilization, then total mobilization will increase with the number and value of the offices at stake, along with the efficiency of vote transfers among copartisans. In the empirical literature, evidence of these effects has mostly hinged on observational studies of the electoral calendar (which affects the number and value of offices at stake) and ballot structure (which affects transfer efficiency).

Disaggregating the Electoral Calendar Reduces Turnout

Various empirical papers have studied the effect of how "general" or "decisive" elections are. For example, Blais & Dobrzynska (1998), in a study of 324 elections held in 91 countries, contrasted turnout rates under three conditions: (a) the lower house election is concurrent with all of the following: subnational elections, upper house elections (if there is an upper house), and presidential elections (if there is an elective president); (b) the lower house election is held separately from exactly one of the above elections; and (c) the lower house election is held separately from at least two of the above elections. They find that turnout rates are higher, the more decisive the election.

The importance of decisiveness has also been argued in a series of studies of the United States, which collectively cover American electoral history from the early nineteenth century to the present. As of 1840, roughly three-fourths of the American states held nonconcurrent elections for the US House and president. By the mid-1880s, however, all but a few states held concurrent elections. As Engstrom (2012, p. 376) notes, "The historical peaks of turnout [in the US] were reached precisely in the period after the bulk of states synchronized their electoral calendars yet before the widespread adoption of the secret ballot."

Complementing this macrohistorical correlation, Engstrom (2012, p. 381) also shows that, at any given time, turnout was 4.47% lower in nonconcurrent than in concurrent states. Looking across time, he finds (p. 382) that "there is a larger 'surge and decline' in synchronized states. For [concurrent] states, the difference in turnout between presidential and midterm years was 11.42%. For [nonconcurrent] states the difference in turnout . . . was a smaller 6.95%."

After the mid-1880s, there is very little change in the proportion of states holding concurrent House and presidential elections, yet turnout declines substantially over the period 1890–1920. This turn-of-the-century decline in turnout can, according to Engstrom (2012) and Engstrom

& Kernell (2014), be attributed partly to the separation of state and local elections from national elections.

Considering the period after Engstrom & Kernell's study ends, Boyd (1981) argues that further disaggregation of the electoral calendar explains a good part of the United States's turnout decline after 1960. Consistent with this view, others attribute the United States's unusually low turnout rates among contemporary democracies to its high frequency of nonconcurrent elections (Jackman & Miller 1995, pp. 482–83; Cox 1999, pp. 407–11).

Fusing Votes Increases Turnout

Even when separate officers are elected concurrently, voters mobilized for one race may or may not vote for copartisans running in other races. In the US case, Engstrom & Kernell (2014) provide an extensive study of how vote fusion—via the device of the party-strip ballot—affected US turnout rates. Turnout rates increased substantially when the party-strip ballot was adopted and declined substantially after its replacement by the Australian ballot. Moreover, Engstrom (2012, p. 381) shows that what kind of Australian ballot a state adopted correlated with its turnout decline: “The office bloc reduced turnout by 8.56%, while the party column reduced turnout by a smaller 3.72%. This difference was significant.” Engstrom's finding makes sense in that the party-column ballot offered voters an easier way to vote a straight party ticket than did the office-bloc ballot.

FUTURE RESEARCH

Electoral rules can directly affect the net costs voters must bear to participate in elections—by poll taxes, fines for nonvoting, and other means. Electoral rules can also influence parties' mobilizational efforts and thus indirectly affect turnout. In this article, I have reviewed the latter sort of effects as illuminated by state-of-the-art mobilization models.

My view is that such models are the most promising way forward for thinking about how electoral rules affect turnout. My main suggestion for improvement is that such models need to better reflect secondary mobilization. Mobilizational effort translates into votes not only via primary mobilization (increased turnout among those initially contacted) but also via secondary mobilization (increased turnout among the friends of those initially contacted). The more important one thinks secondary mobilization is, the more the problem of turnout looks like a vast subcontracting problem. Each party must subcontract the bulk of its mobilization activities to (a) organized interest groups affiliated with the party, (b) candidates nominated by the party, and (c) their activists' and voters' informal social networks. Depending on the electoral system, different subcontractors look like better bets.

In electoral systems with a single nationwide district operating under PR, labor unions, ethnic minorities, and churches may be particularly efficient subcontractors. Such groups can invest in long-term voter mobilization efforts, confident that they will get a stable return on their investment in future years. They need not worry about any geographical mismatch between where the party needs votes and where their members reside. Nor need they worry about how long their members will remain in any given geographic location.

In electoral systems with many SMDs operating under plurality rule, things look different. Local parties will prefer subcontractors with geographically stable memberships concentrated in the district. Groups whose members live in multiple districts will be less attractive. Moreover, all groups—locally concentrated or not—will invest less in long-term mobilization, because the payoff in expected seats for any given increment of votes varies with the district's competitiveness in each year.

In order to better illuminate the subcontracting of mobilization, I have suggested relaxing two assumptions in extant models. First, relaxing the “all and only” assumption makes it easier to accommodate qualitative accounts of what parties actually do when they mobilize, and to explain why turnout declines with the number of parties in PR systems. Second, relaxing the “zero mobilizational spillovers” assumption may be essential to explain why the organization of mobilization differs so markedly between PR and SMD systems and over time within SMD systems.

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