PARTY COMPETITION AND ELECTORAL TURNOUT: DOWNS'S CALCULUS IN A MULTIPARTY SYSTEM

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1 Introduction

In this paper we shall focus on explanations of the act of voting, i.e. answers to the question of why people cast their vote. This question is rather fundamental in understanding politics and collective behavior in general. Indeed, it has often been seen as crucial test of what is known as the rational choice theory (RCT, for brevity); if the theory is incapable of providing a plausible rational explanation for the act of voting, the theory based on rationality assumption has to be abandoned.

The task of explaining the decline in turnout is of course related to that of accounting for the fact that people participate in elections or, in fact, to explaining the decision to contribute to the provision of collective goods in general (Riker and Ordeshook 1973, 72; Uhlaner 1993, 68). If one finds a set of conditions or factors that explains why people vote in general, one might look for the explanation of the lowering turnout in those conditions or factors as well. Perhaps their presence has become less frequent over time or some new conditions have diminished their causal efficacy.

One of the considerations that is sometimes equated with the RCT account of the act of voting is the perceived impact one's vote would likely

have on the electoral outcome. The more likely one's vote is to change the outcome, the more stronger is the incentive to vote. Consider the well-known expression in voter calculus (Downs 1957; Tullock 1968):

$$R = PB - C \tag{1}$$

where R is the reward from the act of voting, P is the probability of the vote changing the outcome to the one favored by the voter, B is the benefit from the favored outcome and C is the cost of voting. The standard argument is that since P for any individual voter in any real world election is bound to be minuscule, no matter how high much value B the voter attaches to his/her favored outcome, C is almost certain to exceed PB. Therefore, the reward is bound to be negative, whence the act of voting is not rational in the expected utility maximization sense. Consequently, the most fundamental political act cannot be explained by the descriptive rational choice theory. By the same token, the normative rational action theory would seem to yield an absurd prescription not to vote for the generic voter.

We shall evaluate this argument more fully in the penultimate section of this paper, but for now we focus on some of its implications. To wit, if the argument is correct, then the following statements would hold:

- By voting the voter increases the probability of his/her favorite outcome from the what it would have been had he/she (hereinafter she) not voted, ceteris paribus.
- The closer the election, the more likely the voter is to vote rather than abstain.

On closer inspection, it turns out that the former statement pertains to properties of voting schemes, while the latter is an empirical claim regarding voter behavior. We shall discuss these statements in turn.

2 Systems that encourage voting

Fortunately, many commonly used voting systems are monotonic, i.e. satisfy the condition which says that whenever a candidate or alternative wins in an electorate, it should also win when its support is increased, provided that no other changes occur in the electorate. As an example of monotonic system, consider the first-past-the-post (FPTP) system: every voter has one vote and the candidate who receives the largest amount of votes is the winner. Surely, this system is monotonic.

Another monotonic system is the Borda Count. This system takes individual preference rankings as inputs and turns these into collective preference rankings. Given a profile over k alternatives $a_1, \ldots, a_k$, this is done by first encoding the preference ranking of voter i into vector with k components

$$v_i = (n_{1i}, \ldots, n_{ki})$$

where n_{1i} denotes the number of alternatives ranked lower than a_1 in i's ranking, n_{2i} the number of alternatives ranked lower than a_2 in i's ranking etc. Summing over voters gives:

$$B = \sum_{i \in N} v_i = (B_1, \ldots, B_k)$$

which is the vector of Borda scores of alternatives.

To see that the Borda Count is monotonic, consider a vector of Borda scores and see what happens to it if any voter or group of voters decides to rank the winner higher than they did originally. This would mean that the winner's score becomes now larger than it was since some voters now rank more alternatives below it than originally. In particular, no other alternative than the winner gets a higher score than originally. Hence, after the change the original winner remains the winner.

Consider now another theoretical property that is directly pertinent to turnout, viz. the participation axiom. It states that in terms of electoral outcomes no voter group is ever better off by abstaining than by voting according to its preferences, ceteris paribus (i.e. other voters' behavior remaining the same). It is clear that FPTP system satisfies the axiom since by voting for its first ranked alternative a voter can never bring about a worse outcome (for herself) than by not voting at all. Of course, it may be the case that abstaining or voting is accompanied with no change in the outcome, but the point of the axiom is that abstaining not result in a better outcome than voting from the abstainer's point of view.

Equally obvious is the conclusion with regard to the Borda Count. By voting according to one's preferences one cannot bring about worse outcome than by abstaining. Thus, both FPTP and Borda Count satisfy the participation axiom and are monotonic. In this sense they both encourage voting.

3 Systems that do not encourage voting

There are, however, also systems that may respond in counterintuitive ways to preference modifications. Non-monotonic systems may, by definition, respond to an increased support of a winner by turning it into a non-winner.

Plurality runoff is non-monotonic. It is also vulnerable to the no-show paradox (Fishburn and Brams 1983), i.e. does not satisfy the participation axiom.

Plurality runoff is by no means the only system that violates monotonicity and participation axiom. Another well-known example is the single transferable vote (STV) which in the context of single-winner elections is known as Hare's system. When the number of alternatives is three, the behavior of STV is identical with that of plurality runoff. Therefore, the above examples also demonstrate that Hare's system is non-monotonic and vulnerable to no-show paradox.

The no-show paradox occurs when a group of voters can improve upon the voting outcome (from their own view-point) by abstaining from what it would be if they voted according to their preferences and everything else remained the same. A strong no-show paradox occurs when the abstainers not only improve upon the outcome but achieve their best outcome (i.e. first-ranked alternative) by abstaining (Pérez 2001, Saari 1989, Saari 1995). The strong version of the paradox is obviously more dramatic than the earlier one. Fortunately, none of the systems commonly used in elections is vulnerable to the strong no-show paradox. However, the quite common parliamentary voting procedure known as amendment procedure may lead to a strong version of the paradox.

4 Another puzzle of participation

In principle one could expect that in systems vulnerable to the no show paradox the turnout is lower than in systems satisfying the participation axiom for the nearly tautological reason that the latter provide voters with the assurance that under no circumstances can they do harm to their own interests by voting instead of abstaining. Yet, even a cursory glance at empirical data suggests that systems vulnerable to the no-show paradox do not in general have lower turnout rates than systems invulnerable to it. If one compares, for example, turnout data from the Finnish presidential elections, which since 1994 have been conducted using the plurality runoff system, and from the Finnish parliamentary elections (PR), the former seem to be accompanied with higher rather than lower turnout rates than the latter. In the following we present some turnout percentages on recent Finnish elections.

year	parliamentary elections	municipal elections	presidential elections
2003	69.7	-	-
2000	-	55.9	76.9 / 80.2
1999	68.3	-	-
1996	-	61.3	-
1995	68.5	-	-
1994	-		82.2 / 82.3
1992	-	70.9	-

Clearly, the plurality runoff system seems to activate voters more than the plurality based PR systems of parliamentary and municipal elections. Thus, contrary to what one would expect the system not satisfying the participation axiom is accompanied with higher turnouts than systems satisfying it. In the other hand, the voters seem "rational" in the sense that the turnout on the second round of presidential elections is higher than on the first one. From the point of view of the no-show paradox this makes sense: on the second round there is no chance that the voter might regret voting for her higher ranked candidate, i.e. the second round is invulnerable to the no-show paradox.

The runoff system has been in use in the three most recent Finnish presidential elections. On the basis of this experience, one district-level observations is worth making. To wit, the turnout has been consistently higher in presidential elections than in the parliamentary ones in all electoral districts over the period in which the current plurality runoff system has been in use. This holds for both rounds of the presidential elections (Statistics Finland 2007). Indeed, the difference is typically of the order of 10 percentage points. For example, in the largest district of Uusimaa the difference in the turnout of the 1994 presidential (first round) and the 1995 parliamentary one was 12.3. For the 2000 presidential (first round) and 1999 parliamentary elections the corresponding difference was 10.2. Between 2006 presidential and 2007 parliamentary elections this difference was 9.3 in Uusimaa district.

As already pointed out, there seems to be a systematic difference between the first and second round turnouts in the Finnish presidential elections. In contrast to what has been observed in the U.S. gubernatorial and senatorial primaries (Bullock et al. 2002), the turnout in the Finnish presidential elections has been consistently higher on the second than in the first round. With the exception of 3 districts out of 15 in one election – 1994 – the second round has attracted more voters to the polls than the first round.

To the extent the Finnish parliamentary elections resemble the FPTP elections, we may thus conclude that the system vulnerable to the no-show paradox attracts more voters than the system where this paradox cannot

support for the largest party	parlimentary elections 2003	municipal elections 2000	number of municipalities
$< 25\%$	69.8%	59.4%	7
$25 - 29.9\%$	69.9%	58.1%	51
$30 - 39.9\%$	69.6%	60.9%	121
$40 - 49.9\%$	69.2%	63.2%	94
$50 - 59.9\%$	69.7%	63.9%	97
$60 - 69.9\%$	72.6%	66.8%	33
$70 - 79.9\%$	75.0%	69.5%	20
$> 80\%$	77.3%	72.0%	7

Table 1: Turnout in Finnish elections. Source: Bengtsson 2004

occur. From the RCT perspective this is certainly puzzling. In the U.S. the lower turnout in the second has been explained by the fact that there are typically far fewer other offices to be voted on in the second round. In the Finnish elections, no other issues or offices are being voted on. Hence, the comparison between the first and second round turnouts is closer to the proverbial *ceteris paribus* condition.

What about the closeness of the election? In other words, does the difference in the variable P in equation (1) explain turnout differences? Perceived probability of making a difference in outcomes would provide a reasonable RCT explanation for the act of voting. We shall look at evidence from two very different political systems, the British and Finnish ones. The former is based on majoritarian principles, while the latter is a proportional representation system. We start with the latter.

5 Finnish municipal elections

In an effort to find out factors accounting for variation in turnout in Finnish parliamentary elections of 2003 and municipal elections of 2000, Bengtsson (2004) compares two explanatory hypotheses, one emphasizing the contextual factors, i.e. the socio-economic circumstances under which the voters live, and the other looking at voting as an act of choice. The following table (Table 3) summarizes the turnout data from municipalities with various levels of support for the largest party (Bengtsson 2004, 9). The last column refers to the number of municipalities that belong to each largest party support category in the municipal elections of 2000.

The share of votes given to the largest party is certainly a fairly good

indicator of the lack of political competition prevailing in a municipality. We shall present a somewhat more detailed indicator shortly, but before doing that let us observe that Bengtsson's table seems to suggest a nearly inverse relationship between the level of competition – as measured by the vote share of the largest party – and the electoral turnout both in parliamentary and municipal elections. Especially marked is the high turnout in municipalities where one party gets more than two thirds of the votes. Rather than competition it seems that the lack thereof explains differences in turnout. This conclusion has also been made – with some qualifications –in Grönlund's (2004) comprehensive study.

The share of votes to the largest party is, however, somewhat crude measure of political competition. In the following section we shall outline a somewhat more detailed detailed descriptive methodology.

6 Clusters of party support

Using the clustering methodology applied by Aleskerov and Alper (2000) to analyze the performance of branches of Turkish banks Aleskerov and Nurmi (2003) analyze seven most recent municipal elections in Finland in order to find out distribution patterns that would best describe the competitive situation of each election and of each constituency. Of 400+ municipalities and seven elections, it turns out that 87 patterns are needed to classify the support distributions in clusters that are optimal in the sense of providing best classification of data (the ratio of within cluster variation to between cluster variation is minimal).

For the analysis of turnout data it seems relevant to consider clusters characterized by intensive competition, i.e. relatively small support difference between largest parties,on the one hand, and clusters dominated by one party, on the other. If closeness of competition is to have importance to voting decisions, it makes more sense to consider lagged process so that one looks at how competition at election t affects turnout at election t+1 than to compare closeness of the race and the turnout both at election t.

We singled out two support patterns which we think describe relative tough competition setting. In both clusters of municipalities the average support difference between two largest parties is less than 10%. The clusters differ mainly with regard to which parties are largest: in one of them it is Social Democratic Party (SDP), and in the other it is the Center Party (KESK).

In 10 clusters characterized by small or nearly nonexistent competition, the average difference in support between the dominant party and the runner

cluster no.	average turnout at t	next election turnout (t+1)
3	72.4	69.8
10	73.9	73.8

Table 2: Turnout in Finnish clusters with tough competition

cluster no.	average turnout at t	next election turnout (t+1)
1	75.8	74.6
4	74.9	74.7
9	77.1	75.5
11	77.2	76.8
31	77.1	78.9
32	76.4	76.3
33	72.7	73.1
40	77.3	77.4
58	76.9	78.2

Table 3: Turnout in Finnish clusters with one party dominance

up is more than 20% units and in each one of them the dominant party's vote share exceeds 50%. Our preliminary findings are presented in Tables 4 and 5.

These data provide no support for the contention that the toughness of competition at election t would increase the turnout in the following election. Differences are minor in both tables, but the overall turnout seems to suggest that the one party dominance is accompanied with higher turnout level than the level prevailing in clusters of tough competition. In any event, toughness of competition does not seem to increase turnout in the Finnish municipal elections.