Since the work of Maurice Duverger (1954), one of the most fundamental ideas in political science is that a party system is shaped by the electoral institution that it possesses. The particular effects of each electoral system can be systematically derived and predictions made of the normative consequences. Duverger states in his famous Law that plurality electoral systems favor two-party systems while systems of Proportional Representation (PR) are associated with multi-party systems. While the deterministic nature of this relationship between electoral system and party system is debatable, it is generally accepted (Riker, 1976, 1982, 1986; Sartori, 1976, 1986; Taagepera and Shugart, 1989; Lijphart, 1994).

Perhaps the most fruitful and encompassing work in a similar vein is that of Douglas Rae (1967). He makes bold observations about not only the properties of each electoral system (his "similarity propositions"), but also about the comparisons between different electoral systems (his "differential propositions"). Rae finds that in all electoral systems there exists "a relative advantage of strong elective parties over weak ones" (Similarity Proposition One). Rae defines a "large" (i.e., "strong elective") party as any party with greater than 20 percent of the vote and that all systems slightly favor the top two vote-getting parties (hereafter referred to as "large parties").

By Rae's definition of a "large" party, Similarity Proposition One usually pertains to not only the largest party, but also to the second largest party as well. Both parties, individually and collectively, benefit from their size. The political significance of this
over-representation is the "manufacturing" of majorities (i.e., a party obtaining a majority of seats without a majority of votes) (Similarity Proposition Three).

Rae determines that the large party seat bonus is more pronounced in plurality/majority electoral systems than in proportional electoral systems (Differential Proposition One). He also illustrates the role that district magnitude (i.e., the number of seats awarded in the district) plays, stating that a positive relationship exists between district magnitude and proportionality (Differential Proposition Ten). Thus, there should be a positive incentive for large parties to desire more majoritarian systems, while the smaller parties should prefer more proportional systems.

Other work has confirmed and extended Rae's findings. Sartori (1976) emphasizes Rae's predicted correlation between proportionality and district magnitude. The logic of his argument is that a small district magnitude allows only a small number of parties to gain effective representation, while a larger district magnitude allows a greater number of parties to win seats. Sartori (1976, 1986) posits that all electoral systems possess incentives for strategic voting. The more proportional the electoral system, the fewer incentives exist. Therefore, as the district magnitude increases, proportionality and the number of parties increases.

In a comprehensive and systematic examination of democratic legislatures, Taagepera and Shugart (1989) develop a "generalized Duverger's Rule." In an exhaustive empirical analysis they find a positive relationship between district magnitude and the size of the party system. Moreover, they confirm both Rae's similarity propositions and differential propositions. First, they show that all systems award large parties a seat bonus. Second, this over-representation leads to disproportional results for the party
system as a whole. Third, plurality/majority electoral systems produce greater over-
representation and disproportionality than party-list PR electoral systems.

Lijphart (1986, 1994) illustrates that disproportionality is sensitive to electoral
system rules. He confirms Rae's differential propositions in two ways. First, he shows
that plurality/majority systems are less proportional than PR systems. Second, he
provides evidence that different PR electoral formulas can be differentiated by their
degree of proportionality. Lijphart states that some PR formulas (e.g., D'Hondt) are
clearly less proportional than other PR formulas (e.g., Hare). Third, he agrees with
Sartori (1976, 1986) and Taagepera and Shugart (1989) in the positive relationship
between district magnitude and proportionality.

Cox (1990) develops a formal proof of the connection between district magnitude
and the number of parties. He finds that if political parties can be arranged on a one-
dimensional spectrum, lowering district magnitude will cause a centripetal effect (lowering
the number of parties), while increasing district magnitude will create a centrifugal effect
(increasing the number of parties). Cox's model thus confirms both Duverger's Mechanical
effect and the influence of the district magnitude on electoral outcomes found in the
empirical studies. Blais and Carty (1987, 1991) demonstrate the empirical reality of
Duverger's Mechanical and Psychological effects and also the manufacturing of majorities
by plurality/majority electoral systems.

In general, these works attempt to find electoral system "equilibria." These
authors assume that institutions matter and that they produce predictable results.
Moreover, each electoral system's unique set of procedures favors a singular set of
outcomes. For example, multi-member district party-list PR produces multi-party
systems with coalition governments. PR with small-member districts (or restrictive thresholds) creates three-party systems with one dominant party. Candidate-choice procedures (e.g., Single Non-Transferable Vote) produce clientalism and/or party fractionalization (Katz, 1980; Lijphart, 1984, 1994; Taagepera and Shugart, 1989).

Given the general consensus of the current literature with Rae's propositions, this paper address whether Rae's First Differential Proposition accurately describes four political systems with unusual electoral formulas: the Single Transferable Vote (STV) as employed in the Republic of Ireland, the Australian State of Tasmania and the Australian Senate, as well as the use of the Alternative Vote (AV) in the Australian House of Representatives.

I have chosen these systems for three compelling reasons. First, STV lies midway between majoritarian and list-PR systems (I explain this later), allowing me to compare a shift in electoral system in both directions. Second, all four party systems have comparable political culture, as all four are the product of British occupation/colonization. Last, both STV and AV allow aggregation of votes within the district (which I shall use later to construct party shares), while also presenting information on the electoral strength of individual candidates.

I do not use closed-list PR systems because voters cannot mark a preference for individual candidates. I also refrain from including traditional open-list PR systems (i.e., voters may mark a preference for a candidate) for two reasons: first, often the choice to vote for an individual candidate is optional (e.g., pre-1994 Italy, Switzerland and Luxembourg) and second, the voters choice is ineffective in overturning the party's default order (e.g., Austria, Belgium, the Netherlands, Norway, Sweden) (Taagepera and
Shugart, 1989; Gallagher, Laver and Mair, 1995). I also do not include quasi-list PR (i.e., voters are required to mark a candidate preference yet the seats are awarded by party totals) despite its close similarity to STV. My rationale is that in two cases (Chile and Brazil) continuous elections were either interrupted by military regimes or so short-lived that "each (electoral) period was so different and so largely unrelated that any trends are elusive" (MacDonald and Ruhl, 1989) and in another case (Poland) the system has operated for only a short period. This leaves only Finland, which I shall not consider alone versus the "transferable" systems of STV and AV. I also have excluded the use of SNTV systems (multi-member plurality) because an STV election cannot be approximated from the voting results (while admittedly tentative SNTV results can be derived from STV results).

I compare the actual results in these party systems with predicted results for more majoritarian and more proportional electoral systems. My approach is see how results differ under a variety of electoral rules and infer whether a given party would have an incentive to change the electoral rules. From this comparison, I conclude that not all large parties prefer a shift from their current electoral system to a more majoritarian system. In fact, it is often to the advantage of the second largest party (and sometimes the largest) to maintain an electoral system with a transfer of votes rather than replace the current system with either a more majoritarian or more proportional system. Such parties are at an "electoral equilibrium" in which no change of the electoral system will benefit them. In other words, Rae's Differential Proposition One seems unable to define adequately the position of certain large parties in these systems.
The Single Transferable Vote and the Alternative Vote

The Single Transferable Vote and Alternative Vote possess the same electoral formula for electing members. Both electoral systems work in the following manner. Each voter casts a single vote by ordering her preferences among the available candidates. The number of first-preference votes for each candidate is counted and any candidate receiving the necessary quota is elected. Any surplus votes over this total are transferred to the other remaining candidates. Then the candidate with the lowest number of first preference votes is eliminated and the ballots supporting him are transferred to the other candidates based on the next marked preferences. The procedure repeats itself until all of the parliamentary seats are filled.

The electoral formulae of STV and AV thus differ in only their district magnitude; the former being multi-member and the latter single-member. However, this difference has important consequences. AV is a majoritarian system that favors the larger parties, discourages smaller parties, promotes two-party competition and generates disproportional electoral outcomes (Lijphart, 1994).

On the other hand, STV can be called tentatively a proportional system (O'Leary, 1979; Katz, 1980; Chubb, 1982; Riker, 1986; Lijphart, 1986). Rae classifies STV as a proportional formula, saying that while it lacks the party-list, categorical voting method, the system operates quite proportionally (based on seat/vote ratios and only minimal exclusion of electoral parties from the legislature). Other authors give similar evidence of the high degree of proportionality exhibited by elections with STV (Blondel 1969; Loosemore and Hanby, 1971; Lijphart 1986). More recent literature are in general
agreement, listing STV as a purely proportional system (Gallagher, 1986; Taagepera and Shugart, 1989; Lijphart, 1994; Farrell, Mackerras and McAllister, 1996). Grofman and Bowler (1996) claim that STV is "intermediate between first-past-the-post systems and list PR, albeit more like the latter than the former" (pg. 43). This essay agrees with this assessment.

[ Figure 1 about here ]

From the above collective work, one can think of electoral systems as lying along a single spectrum from the more majoritarian on one end to the more proportional on the other (see Figure 1). On one theoretical end is the proportional goal of one seat for each vote (or perfect proportionality). The closet approximations are the PR systems with a large average district magnitude and party-list ballot procedures. STV is included in the PR systems with a small average district magnitude and/or candidate-list ballot procedures. Crossing over to the majoritarian side of the spectrum, one finds the multi-member district plurality of the Single Non-Transferable Vote (SNTV) as employed in Japan previous to 1994. Next are the single-member district pluralities (e.g., Great Britain) in which a simple plurality of the vote is necessary for victory. Last are the majority formulae in which a candidate must obtain greater than fifty percent of the vote. AV is such a system. Support for such a spectrum, and the placement of the different electoral formulae, is also found in Grofman (1996) who lays out the logic for the continuum. Cox (1997) also suggests that there exists a continuum of systems from those
with the greatest incentives for voters to display strategic behavior (e.g., majoritarian electoral rules) to those with fewer/no incentives (e.g., party-list PR).  

Given Rae's Differential Propositions, large parties should prefer more majoritarian systems while small parties should prefer more proportional systems. For example, In a system using SNTV, large parties would want to replace the electoral system with simple plurality while small parties would want perhaps a small-district PR formula. If parties are instrumental, i.e., that they view the electoral institution as just a rule (albeit an important one) in the larger "game" of party conflict, it is plausible that each party would work towards changing the system in its favor. 

The Data: Elections in Four Party Systems

To test Rae's propositions I examine data in four different party systems in the post-war period. As such, I look at thirteen Irish elections from 1954 to 1992, ten Tasmanian elections from 1950 to 1982, fifteen Australian Senate elections from 1949 to 1984 and sixteen Australian House elections from 1949 to 1984. As aforementioned, the first three party systems employ STV while the last uses AV.

THE RESULTS OF THE ACTUAL ELECTIONS

[ Figure 2 about here ]
Figure 2 presents a condensed review of the results of the fifty-four elections. It displays the average first-preference vote share, the average parliamentary seat share and the average deviation of the two obtained by each party. The parties are aligned on the horizontal axis by their ordinal size ranking, with the left-most party being the largest, the next party on the right, the second largest, etc... The right-most designation is reserved for the collective of "other" smaller parties. The solid line represents the average vote share (i.e., first preferences), the dotted line the average seat share and the dashed line the seat bonus/deficit (i.e., seat share minus vote share).

From Figure 2 it appears that two party dominance is the rule in these legislatures. In Tasmania and the Australian Senate the two largest parties typically obtain over 85 percent of the first-preferences, while in Ireland and the Australian House the two largest parties usually receive three-fourths of the total vote. In all four systems, the two largest parties possess over eighty-five percent of the seats.

Consistent with Rae's propositions, the large parties are over-represented and the smaller parties are under-represented. The STV elections present a clear picture with the largest party obtaining a seat bonus from a low of 1.6 percent in Tasmania to a high of 3.5 percent in the Australian Senate. Furthermore, the second-largest party always obtains a seat bonus. Third parties are slightly under-represented (e.g., Irish Labour almost breaks even with an average deficit of -0.6 percent) while smaller parties and independents suffer to a greater degree.

The results in the Australian House (with AV) differ from that of the STV legislatures. Since AV is a more majoritarian system than STV, the third and smaller parties are a bit more under-represented. However, what is surprising is that the largest
party is under-represented while the second largest party tends to be over-represented. The Labour Party (the largest party) has a seat share less than two percent on average than its vote share. In ten of the sixteen elections, the largest party suffered a seat deficit. In accordance with more observations of majoritarian systems, the deviations from the two percent mean are quite extreme. For example, in the 1975 election the Labour Party received 14.5 percent fewer seats than votes, while in the 1983 election they obtained a bonus share of seats of 10.5 percent.

In three of the four legislatures, the seat bonus of the second largest party is greater than that received by the largest party. This aside, in all four legislatures the top two parties, when taken together, always obtain an average seat bonus of near five percent at the expense of the other parties. This even holds true in the Australian House where the seat bonus of the Liberal Party is greater in absolute terms than the seat deficit of the Labour Party. This two-party seat bonus on average does not significantly differ from that reported by Gallagher, Laver and Mair (1995) for the European parliamentary democracies.

**TOWARDS A SYSTEM OF PR**

If Douglas Rae's propositions are correct, the two largest parties both singularly and collectively would prefer the current system to a system more closely approximating the ideal of Proportional Representation (see Figure 1). This section tests these two propositions by imposing hypothetical PR elections onto the four party systems above. In
other words, how would the seat shares of each party change if, holding the voters' decisions constant, the election had been one of a nation-wide party-list election.

I calculate each party's total seat share as being equal to each party's total vote share (i.e., their entire share of the vote across all districts). This approximation of PR assumes only that the actual votes cast display a sincere party preference. Studies on STV have never disputed this claim (Gallagher, 1986; Sinnott, 1992; Farrell, Mackerras and McAllister, 1996). Moreover, my method is consistent with Rae as he implicitly makes a similar assumption in formulating and testing his differential propositions.

One may ask why I have not chosen to keep the districts intact and use a common PR formula (e.g., D'Hondt) to calculate seats. My compelling reason is that STV is the "more proportional" of the two PR formulas. Many scholars have conclusively shown that STV, ceterus peribus including district magnitude, is a more proportional formula than D'Hondt, which is one of the least proportional of all (Blondel, 1969; Loosemore and Hanby, 1971; Lijphart 1986; Cox 1997). Gallagher (1992) makes a strong case that D'Hondt is more favorable to large parties than STV (and most other PR forumale as well). The conclusion of these authors can be confirmed empirically, with D'Hondt producing a greater seat share for the larger parties. Thus, running a simulation with another PR formula would bring about either marginal/indeterminate change (in the case of equal or slightly more proportional formulae) or seemingly paradoxical, but empirically accurate, change in a majoritarian direction (in the case of D'Hondt).

[ Table 1 about here ]
Table 1 presents the change in seats that would occur in the four party systems with hypothetical PR elections. To formulate this table, I first calculate the national vote share (first-preferences) for each party. I accomplish this by summing the vote shares of all candidates from a similar party. Given a hypothetical single national district of a size equal to the legislature, I then multiply each party's vote share by the number of seats in the legislature. A seat is awarded for each integer with left-over seats awarded by a "largest-remainder" formula. I then sum the results of each election and divide by the number of elections to produce the mean change in seats. The three rows present the best and worst results, as well as the average for all the elections.

Table 1 confirms Rae's propositions, with the exception of the Australian House. For instance, in Ireland, both large parties (Fianna Fail and Fine Gael) would lose seats in a PR election. Most smaller parties would gain seats (the Workers' Party, the Progressive Democrats, and the Other category) with only the Labour Party losing seats. This may be due to the intermittent electoral alliance of Fine Gael and Labour which increases vote transfers between the parties (Gallagher, 1978; Mair, 1989; Sinnott, 1995). The pattern for the Australian Senate and Tasmania are similar, with the large parties losing seats under PR and the smaller parties and independents gaining seats.

The pattern in the Australian House is quite different. The largest party gains seats and the third party (Country Party) loses seats. Labour would gain seats in ten of the sixteen elections and the Country Party would lose seats in all sixteen. This is clearly divergent from Rae's predictions. Why does such a pattern occur? It is the combination of the electoral system and the alliance system in the Australian House. As in Ireland, the second and third parties often enter into pre-election coalition. They are rewarded for this
effort by an electoral system that allows their supporters to transfer their votes from one party to the other. If the voters behave as the party elites want, the sum of the preferences for the second and third parties can overcome the greater first preferences for the largest party.

What is striking is that this happens more often in the single-member transfer system (AV) than in the multi-member transfer system (STV). Perhaps the "winner take-all" nature of a single seat explains the difference between the Australian House's Country Party and Ireland's Labour Party. The former benefits greatly from the current electoral system (AV) while the latter benefits from STV only marginally. Irish Labour is able to win a seat or two in some districts without the help of Fine Gael, but with only a single seat in each district the Liberal and Country parties cannot carve out their own niche, but together they can defeat their rival, the Australian Labour Party.

TOWARDS A SYSTEM OF PLURALITY

But what about a move towards a more majoritarian system? Rae (1967) proposes that the two largest parties benefit from overrepresentation and that this overrepresentation is more pronounced in majoritarian than proportional systems. If this is the case, the two largest parties in any party system should benefit from a change of electoral formulae towards a more majoritarian system. In this next section, I compare the effect an alternative electoral system would have on the Tasmanian and Irish elections. I compare the actual results of the STV contests with the expected results from using the Single Non-Transferable Vote (SNTV) electoral system. This essay
shows that the consequences of this change are non-trivial. Only the second largest party in Tasmania (Liberal) and the largest party (Fianna Fail) in Ireland would prefer a change to SNTV. Moreover, in both cases the two largest parties taken together do not have a combined incentive to introduce a more majoritarian system.

The Single Non-Transferable Vote (SNTV)

SNTV is an electoral formula similar to STV in district magnitude, but similar to plurality formulae in its seat allocation method. In other words, SNTV also uses multi-member districts, but as the name implies, there is no transfer of votes. The seats are allocated in a fashion similar to the "first past the post" plurality system, except in the case of SNTV, the seats are won by the "first 'n' number of candidates past the post" where 'n' equals the district magnitude. For this reason a number of researchers have proposed that SNTV be classified as a plurality system (Rae, 1967) or at best, semi-proportional (Lijphart, 1984; Taagepera and Shugart, 1989).

Expanding on Rae's work, I expect that the distribution of legislative seats under an SNTV system would display characteristics closer to simple plurality, single-member district systems than proportional systems. Both large parties, individually as well as collectively, should receive a substantial seat bonus. Consequently, in comparison to STV, large parties should favor a change to SNTV, while smaller parties would favor retaining STV.

I introduce SNTV elections into Ireland and Tasmania in the following manner. First, I hold static all district magnitudes in each of the elections. Thus, if five seats are
allocated in the district of Cork in the Irish 1954 election (with STV), five seats would be allocated by SNTV in the hypothetical election. Second, I hold static the actual candidates (as well as their party affiliations). This has the inherent problem of neglecting the highly important role of party nomination strategies. More precisely, it neglects the effect that over-nomination has on large parties. Studies show that parties in SNTV elections must be concerned with both nominating the proper number of candidates and distributing the votes equally (Cox and Niou, 1994; Cox and Rosenbluth, 1994). Over-nomination can lead to a loss of seats (from a hypothetical "possible" number of seats) and large parties tend to over-nominate more often than smaller ones. Other studies have shown neither over-nomination nor vote distribution to be an overwhelming concern for party leadership in STV elections (Cohan, et. al, 1975; Lijphart and Irwin, 1979; Katz, 1981; Marsh 1996).

Therefore, my proposed method of simulating a move from STV to SNTV elections will exaggerate the potential gains to large parties (and potential losses to small parties) from such an electoral switch. Results confirming Rae's hypotheses are more likely to result from my simulation than is probably empirically valid. Any results where large parties would stand to gain a large number of seats should be taken cautiously. However, any contrary results (i.e., a large party not gaining seats) would cast a serious doubt on Rae's hypotheses. As such, the above assumption limits the possibility of my hypothesis being correct while strengthening that of the rival hypothesis (Rae).

Third, I assign each first-preference vote (with STV) as the single vote of the SNTV voter. I choose this method for two reasons. First, voters in STV elections should be rewarding their first-preferences in a sincere manner (as mentioned earlier). Thus,
their votes are a good approximation of their actual preferences among the candidates. Second, from a practical standpoint, it is a more plausible approximation than choosing a different distribution of votes. For example, I could sum up the total first-preference vote for each party and then divide it evenly among the optimal number of candidates (in an approximation of the party perfectly managing the vote). This would not be suitable as it is already clear that parties have a difficult time producing such a distribution and I would throw away needlessly the only actual information that I do have about voter preferences.

While the assumption of the static voter appears to be strong, for the rational-choice literature points out that as institutional incentives change voters modify their behavior to adapt, nevertheless, it does provide a starting point for my examination. The focus of this essay is to determine if the translation of votes to seats, as performed by different electoral institutions, favors some parties over others. In order to isolate the institutional effect, I choose to hold voting behavior constant.\[23\] In the common trade-off between completeness and simplicity, I have chosen the latter in the hope that the simulation will produce generalizable results without too large a discrepancy from reality.

Fourth, for each district the list of successfully elected candidates is determined using the SNTV formula, and their party affiliations noted. Also, if the results in any district are different from those under STV, the party affiliation of the "new winner" is noted, as well as the party affiliation of the "new loser". Fifth, a hypothetical legislature is formed by aggregating all of the successful candidate lists from every district.

As an example of the above methodology, in the same aforementioned district, 3,052 first preference votes were recorded for Seán Casey (Labour), who was later elected after ten transfer counts with 8,516 final votes (he won the fifth seat). In the hypothetical
SNTV election, Mr. Casey would receive only the 3,052 first-preference votes and this figure is compared against the first-preference votes of the other candidates (Mr. Casey would still win the fifth seat).

[ Table 2 about here ]

Table 2 shows the change from the actual elections to those that would result from SNTV elections in Ireland and Tasmania. As in Table 1, the three rows present the best and worst results, as well as the average for all the elections. I also include two separate means for the Irish elections due to a change in the pattern of the seat distribution (explained below).

The results in Tasmania are straight-forward, but in conflict with Rae's hypothesis. Both large parties would actually be hurt by a more majoritarian system, with the second-largest party, the Liberals, being the worse off of the two. While the change in seats is less than a single seat per election on average, the actual election by election effects are more dramatic. Given the small size of the Tasmania legislature (only 35 seats), each single seat comprises approximately three percent of the legislature. SNTV would change which party governs in four of the ten elections, with the Liberals benefiting in three of the four.

Given this switch in governmental office from the largest party to the second largest with the introduction of SNTV, the instrumental preferences of Labour are clear while that of the Liberals are not. Labour wants no movement towards a more majoritarian system. Its seat share would decline on average and it would lose three of
the eight governments that it won under STV, with only one offsetting SNTV manufactured election. The Liberals tend to fare worse under SNTV than Labour, but typically only in years in which Labour already has a governing majority. A net gain of two governments in ten elections might be a reasonable incentive to change the system to SNTV.

In Ireland, the most expected result is that the largest party (Fianna Fail) would benefit from the SNTV electoral system. Looking at all thirteen post-war elections, in all but three elections (1957-1965), Fianna Fail would gain seats. What is not expected is that Fine Gael stands to lose almost three seats each election. It is also striking that the minor parties and independents (i.e., the "Others" column) would benefit from shift to a more majoritarian system. Likewise, it is odd that the third largest party (Labour) would only benefit by less than one whole seat each election.

The aggregate summaries in Table 2 confound two divergent trends in the Irish elections. The final two rows display the means for pre-1970 and post-1970 elections. From 1973 to 1992 the results are as expected: the two parties collectively would be better off with SNTV (although Fine Gael is hurt by such a switch). Yet, before the 1973 election STV favors the two parties over a more majoritarian variant. Under SNTV both parties would lose seats and together they would give up three seats. This pre-1973 pattern also exists for Labour and the "Other" parties. Both Labour and the small independents benefit from a switch to SNTV previous to 1973 but are hurt by it after the 1973 election.

Why do these results differ from Rae's expectations? The case of the small parties (in the "Other" category) is easy to explain. The elections from 1954 to 1961 were
contested by a number of small farmer and republican parties which had very centralized geographical bases of support (Gallagher, 1986; Mair, 1987; Coakley and Gallagher, 1993). Dating as far back as Duverger (1954), it has been pointed out that such parties would prefer majoritarian electoral systems in order to take advantage of their geographical concentration.

The lack of support for SNTV among the Progressive Democrats (1987-1992) is due to a difference in their support from that of the small parties of the earlier period. The focus of the PD campaigns are national, rather than that of a small party that runs candidates in a number of concentrated geographical districts. In all three elections from 1987 to 1992 the Progressive Democrats fielded candidates in at least 31 of the 41 districts, displaying their national strategy.

The drop in Fine Gael seats with SNTV is unexpected. Since Fine Gael receives on average thirty-two percent of the first-preference vote, and as already seen, a small seat bonus under STV, one would not expect it to be penalized by a shift to a more majoritarian system. This seat reduction under SNTV would have cost Fine Gael its governing position in all four governments that it participated in during the time period under study (1954, 1973, 1981, Nov. 1982). The beneficiary in all four instances would be its rival, Fianna Fail.

Empirically, the results may be explained by coalition politics, but the argument is short of convincing. Labour and Fine Gael formed an electoral alliance in the elections from 1973 to the November 1982 election and pursued mutually exclusive strategies in all other elections. However, the pattern of the Fine Gael seat deficit during this period is
not strikingly different from the pre-1973 elections. Fine Gael appears to benefit from the system whether it has a pre-election alliance or not.

What may solve the puzzle is the particular "Fianna Fail versus the Rest" characteristic of the Irish party system (Gallagher 1978, 1992; Mair 1979). These authors state that the party system revolves around a competition between Fianna Fail and its bid for a single-party government, and all of the other parties vying to be included in a coalition government. They have shown that Fine Gael receives a larger number of transfers than Fianna Fail from the remaining parties (Gallagher, 1978; Sinnott, 1995). In this manner, Fine Gael candidates who do not possess particularly high counts of first-preference votes (and would not be elected with SNTV) can eventually be elected in later counts with STV. This pattern is similar to that of the Liberal and Country parties in the Australian House.

AV, SNTV, STV AND PR IN COMPARISON: QUALIFYING RAE'S PROPOSITIONS

The most interesting result derived from the above analysis is that some parties would prefer no change in the present electoral system. Two parties in Ireland (Fine Gael and Labour), one in Tasmania (Labour) and one in the Australian House (Country) have no incentive to shift the electoral system towards either a more majoritarian or more proportional system. In other words, these parties are in an "electoral equilibrium." The explanation for this equilibrium is the transfer of votes in these systems. As aforementioned, the Liberal and Country parties help each other in the Australian House while Fine Gael benefits from transfers from most of the smaller parties in Ireland. Irish
Labour tends to receive transfers from Fine Gael and the Workers’ party (Sinnott, 1995) and thus gets more seats under STV than would likely be obtained in either SNTV or PR. Tasmanian Labour also benefits from transfers from smaller parties and would lose important governing seats if the system was more majoritarian.

Also of importance is that two of the above parties are the second-largest in their party system and the other two are the third-largest. Thus it is the largest-party that should want electoral reform, even though it is already the strongest party! This result seems paradoxical (and unexpected) since none of the four party systems have undergone any substantial reform since adopting the current electoral system. Preliminary evidence that the implications of my simulation coincide with empirical events can be seen in the history of national referendums in Ireland. The Irish voters have twice (1959 and 1968) rejected referendums seeking to replace STV with single-member district, plurality elections, both of which were instigated by Fianna Fail, the largest party, when it controlled a majority of parliamentary seats (Sinnott, 1992).

Treating each possible move as a separate case (i.e., one more majoritarian and one more proportional), Rae’s predictions are borne out in 15 of the 22 possible cases (68 percent). This result is graphically displayed in Figure 3. Rae accurately predicts the incentives for all the parties in the Australian Senate, as the large parties would not benefit from PR but the third parties would. In regards to the other party systems, Rae's predictions are realized in 11 of the 18 cases (61 percent). The Labour Party in Tasmania
is troubling since it is the largest party, but it clearly does not prefer a more majoritarian system. The reluctance of the Country Party in the Australian House to prefer PR coupled with the Australian Labour Party's incentive to introduce PR is unexplained by Rae's propositions. In Ireland, only Fianna Fail consistently agrees in practice with Rae's theories.

If I use the party as the unit of analysis, and leaving out the Australian Senate because of the lack of a majoritarian example, only five of the remaining eleven parties (45 percent) have an incentive to behave in the manner that Rae predicts, and two of these are in the residual "other" category encompassing very small parties and independents. The remaining three parties are Fianna Fail (Ireland) and the Liberals (Tasmania and Australian House). Three of the four Irish parties deviate from Rae's predictions, as does Labour in Tasmania and Labour and the Country Party in the Australian House.

CONCLUSION

This examination of four different party systems in the post-war period confirms the continued validity of Rae's argument that large parties, no matter the electoral system, benefit at the expense of the smaller parties. However, this work specifically casts doubt on the generalization of Rae’s work to voting systems with a transfer of votes, and/or small sized districts. Rae's predictions of the incentives of large parties to favor majoritarian systems over proportional systems have not consistently been borne out. This essay finds that with the Single Transferable Vote or Alternative Vote electoral systems, vote transfers may work to a particular party's advantage, creating an incentive
for such a party to maintain the current electoral system. Such a party is in an equilibrium position that the previous research has not identified.

Two implications emerge for future studies of electoral systems. First, it challenges researchers to identify the mechanism by which vote transfers accumulate onto certain large parties, creating the equilibrium position. This would involve not only a detailed understanding of the formal workings of the system but also an understanding of the incentives the system offers voters. Second, it refocuses research back onto an analytical approach to understanding electoral systems. Much post-Rae work benefits from an abundance of data, but all too often merely plots associations of variables without clear causation. This article illustrates how a closer examination of specific propositions leads to new questions and hopefully greater understanding.
Falling into a Niche: Institutional Equilibrium Between Plurality and Proportional Representation for Large Political Parties
Abstract

"Falling into a Niche: Institutional Equilibrium between Plurality and Proportional Representation for Large Political Parties"

Scholars of electoral systems (e.g., Duverger, 1954; Rae 1967) argue that a combination of electoral system and district magnitude provide the strategic incentives for political party competition. All electoral systems reward large parties with a disproportional seat bonus, with this bonus being more pronounced in plurality/majority systems. Thus, large parties invariably wish to compete in majoritarian systems while smaller parties seek a proportional system of seat allocation. This paper shows that an institutional "niche" develops in some party systems where the second-largest party prefers the current electoral system over either a more proportional or more majoritarian system. Specifically, I illustrate how parties in Irish, Tasmanian, Australian House and Australian Senate elections occupy such an equilibrium. Vote transfers create a seat bonus that does not exist in either more proportional or more majoritarian systems (e.g., the Single Non-Transferable Vote).


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1 This similar logic also works for the quasi-list PR elections. The results of STV elections can be transformed into quasi-list PR, but the reverse is not possible.

2 My approach is thus similar to that of Bawn (1993) and her analysis of German electoral laws.

3 For the purpose of clarity, I use male gender pronouns when referring to party candidates and female gender pronouns when referring to voters.

4 In other words, each voter places the number one beside her most preferred candidate, the number two beside the next preferred, and so on until she no longer wishes to mark further preferences or the list of candidates is exhausted. If a voter's ballot is to be transferred but no further preferences are listed (or only preferences for eliminated candidates are listed) the ballot becomes "non-transferable".

5 This is calculated using the Droop Quota. The mathematical formula is as follows:

\[ \text{quota} = \frac{V}{(S+1)} + 1 \]

\[ V = \text{# of valid votes} \]

\[ S = \text{# of seats} \]
This quota varies by district magnitude in STV elections, but is always 50% +1 in AV elections (as district magnitude equals one).

6 There are, of course, special provisions for extraordinary situations (e.g. when not enough candidates meet the quota). A good summary of the entire electoral procedure can be found in Mair (1987) or Sinnott (1995).

7 Katz (1980) is the lone dissenting opinion. He states that STV is really either a plurality formula (due to voting for individual candidates and not party lists) or an intermediate system between plurality and proportional systems. I do not find Katz’s argument persuasive due to his confounding of the electoral system, ballot structure and district magnitude in his classification of STV.

8 Since district magnitude is positively correlated with the degree of proportionality, for the purposes of Figure 1, I have combined the two variables into a single axis (Rae 1967, Lijphart 1984, Taagepera and Shugart, 1989).

9 The Average District Magnitude is the size of the legislature (i.e., the number of seats) divided by the number of districts. (Rae 1967, Taagepera and Shugart, 1989).

10 Similarity Proposition Seven says that all properties of plurality formula apply to the Alternative Vote as well.

11 To be accurate, Cox (1997) is referring to strategic incentives that would limit the number of political parties in the party system. This is congruent to my Figure 1 and its reference to under-/over-representation.

12 Elections are to the Irish lower house (Dail), Tasmanian lower house (House of Assembly), Australian lower house (House of Assembly) and the Australian upper house (Senate).

13 I have not included more recent Australian elections due to a change in the electoral laws. Voters may now cast a single vote for a party-list, which allows the parties to pre-determine the destination of most intra-party candidate transfers.

14 In Ireland, Fianna Fail is the largest party and Fine Gael the second largest. In the three other party systems, Labour is the largest party and the Liberals the second largest.

15 It can be argued that the size of the second-largest party in these systems is unusually large, perhaps due to historical coincidence. The implication being that my cases are at best a prejudicial examination of Rae and at worst a confounding of my selected variable (electoral formula) with the historical party system size.
Let me say in my defense, first, that the size of the second largest party in these systems is not that unusual (see the following fn.). Second, much of the literature shows that a seat bonus will accrue to these parties once they have obtained at least a 20% vote share, a limit cleared by most other second parties (e.g., see Taagepera and Shugart, 1989). And last, the large size of the second-largest parties only strengthens Rae's argument and weakens my hypothesis, thus creating a stronger "straw man" for me to knock down, which I welcome.

16 Note that this pattern occurs in a number of other parliamentary democracies. A brief (and by no means exhaustive) examination of the seat shares of the top two parties in other European democracies reveals that in their most recent pre-1995 elections the top two parties in Greece, Portugal, Spain and the United Kingdom obtained over 85% of the seats and the top two parties in Germany and Austria obtained over 75%. The exceptions are Belgium, the Netherlands, France and Switzerland (Gallagher, Laver and Mair, 1995).

17 In fact, if D'Hondt is substituted for STV in the 1992 Irish elections, the largest party (Fianna Fail) would gain 17 seats at the expense of the other parties.

18 Largest-Remainder formulas are detailed in Rae (1967), Lijphart (1986, 1994), and Taagepera and Shugart (1989).

19 Note that AV leads to a type of strategic voting by supporters of a third party similar to that produced by plurality elections. It is not inevitable that votes would transfer to the second largest party, but it is reasonable to assume that they would transfer to one of the two (but not both) large parties. Thus, the transferability of votes may inevitably create one party that defies Rae's predictions.

20 I do not look at SNTV in the Australian House for two reasons. First, it would not be a more majoritarian shift, but rather a more proportional one. As such it would be a weaker test than that in Table 1. Second, it would involve creating multi-member districts where none exist. As such, there is no reasonable method to create SNTV elections from the current data. I do not look at the Australian Senate because an approximation of a more majoritarian system cannot be accomplished from the actual elections. Parties are allowed in the Senate to list their candidates in a specified order. Voters may choose these "lists" if they so wish. The first-preference of any voter marking the "list" goes to the first candidate on the
list. If the vote has to be transferred, it moves down the list in the pre-determined order. As such, SNTV cannot be approximated as the votes for the candidate on the top of the list are overstated and the votes for the lower candidates are understated.

21 SNTV has been used in Japan (1949-1994) and Taiwan.

22 This is often determined by summing up the party's total votes and dividing by the D'Hondt formula.

23 Holding voters constant assumes that voters do not respond to incentives contained in different electoral systems. However, some work has shown that plurality electoral systems should elicit a particular form of voting behavior that does not exist under proportional formulas (Duverger, 1954; Downs, 1957; Cox, 1987). Other work shows that even PR, and specifically STV, can elicit sophisticated voter responses (Jesse, 1996). Thus, the assumption may too strong. However, it is useful in this study as a way of limiting the effects of the voter and highlighting the effects of the electoral system.

24 A Labour government would be replaced with a Liberal government in the 1955, 1956 and 1976 elections, while the Liberal-Centre Coalition in 1969 would be replaced by a Labour Government.

25 In fact, Fine Gael would lose seats in eleven of the thirteen elections, and there would be no change in the number of seats in the other two elections (1957 & 1977).