By-Elections as Indicators of Canadian Voting*

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The federal by-election has been a much discussed, but little studied political institution in Canada. Interest in these interim votes has been cyclical, peaking shortly after their occurrence and then gradually diminishing until the following general election. Rarely is the formal status of the government jeopardized by their outcome, but its psychological dominance may well be challenged by consistently adverse results. Indeed the actions of government are not immune to such expressions of public opinion as provided through by-elections.[1] Although the effects produced have ranged from the replacement of party leadership to the introduction of new policies, they have all been based upon the assumption that by-elections are accurate indicators of the national consciousness and harbingers for the future.

Yet just how well do these votes actually reflect the public mood, and are they adequate predictors of the subsequent general election? Moreover, if they are good predictors, why are they so? These questions are particularly appropriate given the fact that by-elections are normally contested under circumstances that may be dramatically different from national votes. There are a number of factors contributing to the idiosyncratic setting of by-elections including the relatively small number contested at any given time, the lack of regional representativeness, their inability to alter the government's status, changing political conditions, and the absence of national campaigns.

The paucity of by-elections held simultaneously furnishes an opportunity for campaign resources to be concentrated in a way that cannot be realistically duplicated in the subsequent general election.[2] The problem of regional representativeness renders dubious any attempt to draw national conclusions from a few geographically-specific

1 R. MacGregor Dawson, *The Government of Canada* (Toronto: University of Toronto, 1970), 326.

2 Since 1940, on only two occasions were more than 6 by-elections held simultaneously, 8 on October 24, 1949 and 15 on October 16, 1978.

by-elections.[3] Whether the discussion concerns actual ballot totals or percentage swings from the previous election, the voting patterns of Canada's various provinces are sufficiently distinct to limit the appropriateness of interregional generalizations.[4]

Another reservation about by-elections as meaningful indicators relates to the government's immunity from their consequences, hence freeing voters from the normal repercussions of their actions in a general election. The changing economic and political climate also raises questions about the ability to generalize from these interim votes, particularly where public opinion is subject to continuing volatility. The absence of a national campaign accompanying by-elections has the additional effect of focussing greater attention upon local candidates and issues. This may release many voters from their normal partisan attachments, and instead place more weight upon the impact of localized voting cues such as candidate.[5]

Setting of the Study

Previous Canadian research on the topic is limited to the 1961 work of Howard Scarrow, based upon by-elections held between 1921 and 1958.[6] Scarrow concentrated his attention upon the party in power through use of a crude indicator based upon the proportion of by-elections in which the government registered a "favourable" performance.[7] Using this device, he found that the interim votes did tend to forecast the governing party's fate in subsequent general elections. Scarrow proceeded to examine the relationship of voter turnout and timing of the by-elections with general election results. He concluded by predicting a trend toward "political homogeneity" in Canada, with regional differences minimized and third parties in decline.[8]

Such a prognosis may have seemed appropriate in the afterglow of the 1958 Diefenbaker landslide, but ensuing events have proved it to be short-sighted. For this and other reasons it seemed timely to undertake a re-examination of by-elections, which could reflect the 20 years of

3 During the investigation period, of the 57 dates on which federal by-elections were contested only 3 times were as many as 4 provinces represented, and only on October 16, 1978 were more than 4 provinces included.
4 Mildred A. Schwartz, *Politics and Territory* (Montreal: McGill-Queen's, 1974), 139-65.
5 Harold Clarke, Jane Jenson, Lawrence Leduc and Jon Pammett suggest that 77 per cent of the electorate is "permanent" in the 1974 general election, but this figure might be questionable in by-elections (*Political Choice in Canada* [Toronto: McGraw-Hill Ryerson, 1979], 363).
6 Howard A. Scarrow, "By-Elections and Public Opinion in Canada" in *Public Opinion Quarterly* 29 (1961), 79-91.
7 Ibid., 84-86. It might be mentioned that Scarrow's definition of a "favourable" performance included vote declines of up to 5 per cent.
8 Ibid., 89-90.

Les élections partielles comme indicateurs du vote

Les élections partielles attirent fortement l'attention lorsqu'elles paraissent être annonciatrices d'événements prochains et elles suscitent de nombreuses spéculations sur leur pertinence pour les élections futures. Malgré cela, il y a peu de preuves systématiques du pouvoir prédictif des élections partielles.

Parmi les hypothèses spécifiques étudiées dans cet article, il est suggéré que les élections partielles sont des idiosyncrasies échappant au modèle de l'élection générale parce qu'elles procurent aux électeurs une occasion unique d'enregistrer leur opposition au parti au pouvoir, sans risquer de lui faire perdre ce pouvoir. Une autre distorsion résulterait de la capacité des partis fortement organisés, comme le NPD, à concentrer leurs ressources de manière à réussir de façon disproportionnée lors de ces concours intérimaires. De plus, les effets de variables aussi disparates que la diversité régionale, le taux de participation et la proximité de la prochaine élection générale, sont aussi étudiés.

Les données proviennent de 147 élections partielles fédérales tenues entre les élections générales de 1940 et celles de 1980. La preuve suggère que les partielles sont de meilleurs indicateurs du vote futur que ne le sont les résultats de l'élection générale précédente. De plus, les données semblent corroborer les diverses hypothèses confirmant ainsi l'intrusion dans le cas des élections partielles de facteurs absents lors des élections générales. Parmi ces influences, on note le rejet du parti au pouvoir, l'amélioration de la performance du NPD au Canada anglais et des « autres partis » au Québec; plus de changements à l'ouest de l'Outaouais; ainsi que des variations plus étendues dans les cas caractérisés par un changement majeur du taux de participation et une plus grande distance de l'élection générale.

political events occurring since Scarrow's study. Moreover, it could investigate the electoral performance of all parties rather than just the government, analyze variation by region, and make use of more sophisticated methodological techniques than were previously employed.

Since this study was designed to assess the support patterns of all four sustaining political parties, the 1940 federal election was selected as the point of initiation. The election of 1940 marked the established presence of the CCF and Social Credit parties upon the national scene.[9] During the 40 years spanning that vote and the 1980 general election, 152 federal by-elections were contested, of which 147 were deemed sufficiently competitive to be included in the study. The minimum criterion for suitability required the constituency to be contested by at least two of the four national parties, or else one national party and a strong minor party.[10] The five races omitted were typically

9 The 1940 election also marked the virtual end of uncontested by-elections which had previously been commonplace.

10 Several Quebec by-elections were included in which only Liberals and representatives of minor parties or independents ran as candidates, because the latter won at least 20 per cent of the total vote. In a few 1940s contests, candidates running

characterized by one national party candidate being opposed by a token independent, as when a Nova Scotia riding was vacated so that upon being elected Conservative party leader, Robert Stanfield could enter the House of Commons. Data were gathered from the annual reports of the Chief Electoral Officer, and the various editions of the *Canadian Parliamentary Guide* published during the period investigated. This 40-year interval was thought to be a satisfactory time frame for assessing the significance of by-elections in Canadian voting.

That by-elections are given great attention after their occurrence is an accepted fact of political journalism.[11] Reams of pages are devoted to speculation over these vote results as a portent of the destiny of various parties, politicians and issues. Still, doubts linger over their accuracy as predictors of the future. The underlying assumption, difficult to resist in the wake of by-election results, is that parties benefitting from vote swings are destined for more widespread electoral success. Yet, just how far can generalizations be drawn upon the basis of a small number of contests? Does not the unique setting of each by-election create uncertainty as to whether they might not just be isolated aberrations within the political process? Moreover, even if by-elections are reliable precursors of the general election results in the constituencies where they are held, what national or even regional inferences can be drawn from contests that frequently revolve around local considerations?[12] Beyond the above general questions pertaining to the significance of these votes, a series of more specific considerations can also be reviewed. This analysis provides an opportunity to examine the variant effects of such factors as party, region, incumbent government, voter turnout, and proximity to the general election in investigating the by-election process.

One might expect the success rates of parties in these interim contests to be related to the political resources available to them, and particularly to their respective abilities to channel those resources. Since by-elections are typically fought in the absence of a national campaign, they tend to place a premium upon skills of local organization and manpower availability. The New Democratic party has a reputation for its ability to mobilize precisely such resources perhaps because of its more ideological orientation.[13] During by-elections the NDP often seems better able to marshall its followers from outside the

under the banner of United Reform, New Democracy, Bloc Populaire and Union des Electeurs were included in the Social Credit totals, where there appeared to be an accommodation between those movements.

11 For example, the *Globe and Mail* was filled with articles and columns devoted to this topic from October 17 to October 28, following the by-elections of October 16, 1978.

12 This question is raised in J. K. Pollock, "British By-Elections Between the Wars," *American Political Science Review* 35 (1941), 519-28.

13 Desmond Morton, *Social Democracy in Canada* (Toronto: Samuel, Stevens Hakkert, 1977), 54.

constituency, as well as to focus its political organization. However, it might reasonably be anticipated that this disproportionate support would be a short-lived phenomenon, tending to dissipate in the ensuing general election when such a concentration of political resources could no longer be sustained. In other words, the NDP may perform optimally in the artificially-created by-election situation, but could not expect to hold its support over time.

The potential impact of the regional variable is based upon the supposition that differing conditions in a particular part of the country will result in patterns divergent from other areas. For example, the historical one-party dominance of the Liberals in Quebec may well have caused residents of that province to perceive the by-election process differently from those in the rest of Canada, and hence to act differently. Further, it might be argued that in the more traditional areas of the nation, notably the Atlantic region where partisan allegiances are more deeply ingrained and third parties have been weak, by-election patterns would be less distinctive.[14] In general, one could hypothesize an inverse relationship between an area's political traditionalism, and change from national votes to by-elections.

One of the few previously established patterns pertaining to by-elections is the contention that the party in power will tend to be punished by voters, who are safe in the knowledge that they can protest without fear of overturning the government.[15] There are few administrations able to rule without offending at least certain segments of society, and it is this negative side of their performance that may seem to weigh more heavily in these situations than it does in general elections. Indeed, evidence provided by Kernell in the United States suggests that mid-term elections are more likely to draw participation from negative voters upset with the government's performance, than from satisfied voters who support the administration.[16] From this premise follows the hypothesis that parties will perform better in by-elections held while they are in opposition, than when they are in government.

Another factor thought to influence the process is the degree of citizen participation in by-elections. Since these contests are subject to widely divergent rates of turnout, it seems reasonable to postulate a greater congruency in results between by-elections and general elections where the rates of participation are most comparable.[17] This

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14   John Wilson, "The Canadian Political Cultures: Towards a Redefinition of the Nature of the Canadian Political System," this JOURNAL 7 (1974), 463.

15   R. L. Leonard, *Elections in Britain* (London: D. Van Nostrand, 1968), 119-26.

16   Samuel Kernell, "Presidential Popularity and Negative Voting: An Alternative Explanation of the Midterm Congressional Decline of the President's Party," *American Political Science Review* 71 (1977), 52.

17   The turnout rates over the 147 by-elections varied from 89 per cent to 23 per cent, a range much broader than occurred in the corresponding previous general elections,

assumes a certain consistency by individuals in their propensity to cast ballots from election to election.[18] Essentially, it suggests that where the actual voting electorate is more similar, the effect of its collective behaviour will also be more similar. The converse of this proposition would be that constituencies having the greatest discrepancy in turnout from general to by-elections, would exhibit the least congruency in results.

The timing of by-elections might be hypothesized to function comparably to the effect of turnout. That is, the closer their proximity to the following general election, the more similar would be the public's state of mind, and therefore the better the by-elections would serve as indicators for the following election results. This assumption has some intuitive appeal, since it seems reasonable that public opinion would shift less over a shorter period of time than it would over a longer interval. Still, public opinion does not necessarily move monotonically, but sometimes rather ebbs and flows.[19] Hence it is possible that if this general hypothesis is appropriate at all, it may be so under more qualified conditions.

Observations

In addressing the concerns described above, this study undertook to move beyond the examination of net constituency changes from general elections to by-elections as featured in the Scarrow article. Rather, the data base developed here allows for a more detailed examination of the actual electoral totals and vote percentages in each of the 147 cases. Ideally, the investigation of this subject would require for each contested constituency complete information about the preceding general election result (T1), the by-election result (T2), and the following general election result (T3). Unfortunately the periodic redistribution of electoral boundaries precluded the opportunity for the availability of total data, since constituency borders for the subsequent general elections (T3) were altered prior to the elections of 1949, 1953, 1968 and 1979. This left only 66 of the by-elections with full information over comparable areas during the three points in time. However, records provided by the University of Waterloo's Election Studies Centre

when the figures were 90 per cent to 46 per cent. The overall average participation rate among the by-elections was 60 per cent, considerably below the general election average of 72 per cent for the constituencies where by-elections were held. A comparable 12 percentage point mean decline in by-election turnout was also found in Great Britain as reported by Stan Taylor and Clive Payne, "Features of Electoral Behaviour at By-Elections" in Chris Cook and John Ramsden (eds.), *By-Elections in British Politics* (London: MacMillan, 1973), 337.

18   William Mishler, *Political Participation in Canada* (Toronto: Macmillan, 1979), 40.
19   Philip E. Converse, "The Nature of Belief Systems in Mass Publics," in David Apter (ed.), *Ideology and Discontent* (Glencoe: The Free Press, 1964), 242.

permitted a matching of redistributed districts for the 1968 and 1979 elections with the preceding constituency boundaries, thereby raising the total number of cases with complete data to 101 out of the 147 by-elections.[20]

Data presenting the percentage vote shifts for each of the parties between the preceding general election and the by-elections (T2-T1), are provided in Table 1A. This is based upon all 147 seriously contested by-elections and indicates that the Liberal, NDP,[21] and Other party categories experienced the most decisive net shift from the preceding general election. In the case of the Liberals there was an average decline of almost 4.5 percentage points, while the NDP and Others achieved gains, and the Conservatives and Social Credit saw little overall change during the full complement of by-elections. This evidence seems consistent with the supposition that parties which can best focus their strength, such as the NDP, will benefit disproportionately.

If such is the case, it would be reasonable to expect the party to excel in areas where its electoral roots are deepest. A closer examination of the regional control in Table 1A reveals that the NDP had no improvement among the 52 by-elections held in Quebec, but gained an average of 5 points in English Canada where it is better established.[22] For the remaining national parties, there would seem to be few differences between their pattern in Quebec and the anglophone provinces. Interestingly, the performance of "Other" candidates, outside of the four sustaining national parties, is a mirror image of the NDP with only minimal vote increases registered outside of Quebec, but gains approaching 5 percentage points in that province.[23]

In order to assess the lingering impact of the by-election results, it is necessary to isolate the subset of 101 contests which furnished full electoral information over three points in time. Data pertaining to this subset are provided in Table 1B, the left-hand column of which corresponds to Table 1A, but differs in that it is based upon only two thirds of the total cases. The by-elections omitted from the subset were those occurring between 1945 and 1953, but despite their absence the chief value of Table 1B is to permit a comparative analysis of each party's performance in both the by-election and subsequent general election.

20 This matching of constituency boundaries for the 35 additional by-elections was performed by Dawne Rennie and Isabelle Kuczinski on a grant provided by Wilfrid Laurier University's Research Fellowship programme.

21 Vote totals for the CCF are combined with the New Democratic party, prior to the establishment of the latter in 1961.

22 Moreover, when the Atlantic region was excluded from consideration, the NDP rises to an average gain of 5.8 points in Ontario and the West.

23 The relatively strong by-election showings of other parties in Quebec tended to occur between 1940 and 1957, when Independents and Independent Liberals frequently constituted the strongest alternative to the Liberal candidates.

TABLE 1

MEAN PERCENTAGE NET SHIFT FOR PARTIES OVER DIFFERING ELECTORAL INTERVALS

	A for all 147 by-elections (95 anglophone Canada, 52 Quebec)	B for 101 by-elections providing full data (66 anglophone Canada, 35 Quebec)		
	T2 - T1	T2 - T1	T3 - T2	T3 - T1
Liberal				
Nation	−4.45	−4.45	0.34	−4.11
(anglophone)	(−4.77)	(−4.65)	(−0.49)	(−5.14)
(Quebec)	(−3.84)	(−4.07)	(1.90)	(−2.17)
Conservative				
Nation	−0.61	−0.79	−0.67	−1.46
(anglophone)	(−0.34)	(−0.71)	(0.71)	(0.00)
(Quebec)	(−1.10)	(−0.95)	(−3.28)	(−4.23)
NDP				
Nation	3.29	4.19	−0.62	3.57
(anglophone)	(5.00)	(6.08)	(−0.26)	(5.82)
(Quebec)	(0.15)	(0.63)	(−1.30)	(−0.67)
Socred				
Nation	−0.43	−0.66	1.37	0.71
(anglophone)	(−0.64)	(−1.08)	(0.24)	(−0.84)
(Quebec)	(−0.06)	(0.12)	(3.50)	(3.62)

TABLE 1—*Continued*

	A for all 147 by-elections (95 anglophone Canada, 52 Quebec)	B for 101 by-elections providing full data (66 anglophone Canada, 35 Quebec)		
	T2 - T1	T2 - T1	T3 - T2	T3 - T1
Other				
Nation	2.21	1.71	−0.42	1.29
(anglophone)	(0.76)	(0.35)	(−0.20)	(0.15)
(Quebec)	(4.85)	(4.27)	(−0.83)	(3.44)

It has been suggested above that the by-election success of the NDP may be an aberration owing to the temporary concentration of political resources, and will not be sustained through the following general election. However, this view is not supported by the data, which show that a net 85 per cent of the New Democratic gains are held at the subsequent vote.[24] Indeed the retention rate is 95 per cent outside of Quebec, and the ability of the party to keep most of the new seats they win in by-elections seems to confirm its holding power.[25] Candidates within the Other party category also follow this pattern of maintaining most of their vote at the next election. In fact, all parties except Social Credit found the by-elections to be better net indicators of the ensuing general election support than were the preceding general election vote levels, and the Socred anomaly disappears when region is controlled. In general, most parties appeared to exhibit a modest reversal between T2 and T3 of the pattern first established between T1 and T2.

The regional control variable accompanying Tables 1A and 1B reaffirms that the NDP and Other parties retain most of their voting strength where they are well established—English Canada and Quebec, respectively. Social Credit also performs consistently better in Quebec, both in by-elections and the following general elections. The Conservatives, on the other hand, do consistently poorly in Quebec, but do recoup their by-election losses in English-speaking Canada. The Liberals fare a bit better in Quebec where they display some recuperative power, as opposed to anglophone areas where their pattern is one of steady decline. The conclusions to be drawn from this are somewhat tentative since only 101 of the 147 by-elections furnish complete data, but it would seem that by-election performance is most indicative for the future among the smaller parties.

Table 2 allows for further investigation of the regional effects. Based upon the full complement of cases, it permits a more detailed examination of the variable which is only dichotomized in Table 1. It has been suggested that politically traditional areas in which third parties have been weak, notably the Atlantic region, would produce less dramatic shifts among parties in by-elections. The summary mean party shifts accompanying Table 2 demonstrate that the Atlantic provinces do indeed witness the lowest average level of change from the preceding general election. On the other hand, those areas which historically have had competitive multi-party systems, particularly British Columbia and Ontario, see higher rates of change.[26] This analysis also points up the

24 Another relevant consideration is that the CCF-NDP vote at T3 is in part a reflection of the party's gradual growth in support during the period of the study. However, other data, not shown here, suggest that this effect has only minimal impact.

25 Since 1940, 10 of the 15 new CCF and NDP seats won were retained at the following general election. However, since the founding of the New Democratic party in 1961, the rate of subsequent success is 6 out of 7.

26 This pattern of regional variation appears unique to by-elections, since relatively less

particular incidence of regional variation as evidenced in the Ontario Liberal vote and NDP support west of Quebec. The Conservatives and Social Credit register relatively greater consistency with the exception of British Columbia, where the Conservative by-election performance declines dramatically but is drawn from only a small number of cases.[27]

TABLE 2

MEAN PERCENTAGE NET SHIFT FOR ALL BY-ELECTIONS BY REGION
(T2 - T1)

	Atlantic (25)	Quebec (52)	Ontario (40)	Prairies (21)	B.C. (9)
Liberal	−3.14	−3.84	−8.31	−2.63	1.40
Conservative	−0.37	−1.10	1.51	0.01	−9.35
NDP	2.91	0.15	5.59	5.59	6.80
Socred	−0.74	−0.06	0.27	−2.37	−0.39
Other	1.33	4.85	0.93	−0.60	1.54
Summary mean	1.70	2.00	3.32	2.24	3.90

As mentioned previously, one widely discussed aspect of by-election lore is that these contests provide an opportunity for voters to record opposition to the government of the day, free from concern that their actions might turn it out of office. Scarrow's research focussed upon an examination of the party in power, and although his work presents data indicating a net decline for governing parties, this was not among his formal conclusions.[28] Leonard's study of Britain between 1945 and 1966 depicted an approximate 3.2 percentage point average by-election swing against the government during this period, affecting both Conservative and Labour regimes.[29] A general indication of comparable Canadian data can be seen in the −4.4 percentage point Liberal by-election decline portrayed in Table 1, since that party formed the government during most of the study.

However, Table 3 permits a more detailed inquiry into the matter, for it distinguishes the 18 contests held during the periods of Conservative government from 1957 to 1963 and in 1979. The Liberal record over the 129 by-elections held when they were in power indicated a drop of over −5.6 percentage points from their previous vote, while the Conservative fall was an even greater −8.5 percentage points during

incidence of interregional disparity is displayed in the constituencies studied betweer successive general elections.

27 The British Columbia totals include one by-election held in the Yukon Territory.
28 Scarrow, "By-Elections and Public Opinion," 84.
29 This figure is an estimate based upon data presented in Leonard, *Elections in Britain*, 126.

the Diefenbaker and Clark regimes. Together, these figures composed an average decline of −6.0 percentage points for the governing party during the total 147 Canadian by-elections, almost twice the proportion found in the British data. Even more dramatic, however, is the size of these losses compared to the respective party performances while out of power. The Liberals averaged 9.8 percentage points better showings while the Conservatives were in government, and the Conservatives scored nearly 9.0 percentage points better in by-elections while the Liberals held power, yet the other parties seemed to be little affected by who ruled.

TABLE 3

MEAN PERCENTAGE NET SHIFT FOR ALL BY-ELECTIONS BY PARTY IN POWER (T2 - T1)

	Liberal government (129)	Conservative government (18)	Relative difference by party in government
Liberal	−5.65	4.16	−9.81
Conservative	0.49	−8.48	8.97
NDP	3.21	3.86	−0.65
Socred	−0.55	0.40	−0.95
Other	2.51	0.05	2.46
Party in power	−6.00		

The question of citizen participation relates congruence of by-election and general election turnout to a comparable similarity in voting results. Regardless of net gains or losses for a given party, this hypothesis suggests that the magnitude of electoral change will resemble the degree of variation in the numbers casting ballots. Table 4 displays data showing the mean absolute change in each party's vote between races, divided by the relative difference in turnout over the adjacent elections. For each pairing of electoral contests the results have been dichotomized into comparably sized categories, distinguishing those where turnout remains most similar from those with a greater difference in participation rate.[30]

The table portrays a consistent, if modest, pattern of results that conform to the hypothesis. For each party, change between T1 and T2 as well as between T2 and T3 is greater in those cases characterized by a

30 Between T1 and T2 the similar turnout category included those constituencies with an absolute change in turnout of less than 11 points. Between T2 and T3 the criterion was 17 points.

larger change in voter turnout.[31] The overall mean differences are not dramatic (1.17 and 2.07 respectively) but the regularity of the finding does seem noteworthy, and is in accord with some similar evidence furnished by Scarrow.[32] The modest nature of the relationships was confirmed by the use of simple regression equations. Only 4 per cent of the Conservative shift between T2 and T3 could be attributed to difference in turnout, and the regression coefficients in most cases were much smaller.[33]

TABLE 4

MEAN PERCENTAGE ABSOLUTE SHIFT BY SIMILARITY IN VOTER TURNOUT*

	T2 - T1 (147 cases)		T3 - T2 (101 cases)	
	Similar	Dissimilar	Similar	Dissimilar
Liberal	10.22	10.70	8.29	9.63
Conservative	10.81	12.04	6.90	11.38
NDP	5.76	5.86	4.14	8.25
Socred	3.07	4.24	4.31	4:55
Other	4.41	7.28	2.44	2.63
Summary mean	6.85	8.02	5.22	7.29

* Entries are absolute percentage vote shifts.

The proximity in timing of the contests was also hypothesized to bear a relationship to electoral performance. It was claimed that votes separated by a shorter time interval should generally correspond more closely than those spread farther apart. Table 5, which is constructed similarly to Table 4, also reveals a fairly uniform pattern consistent with the hypothesis.[34] In all cases but one, a party's absolute change in vote between by-elections and adjacent general elections is greater in those situations separated by a relatively longer time interval. The one exception occurs with Other parties between T1 and T2. Nevertheless, overall there is still a greater shift in the more distant contests of 1.30

31 This general finding was also corroborated in shifts between the preceding and following general elections, T1 and T3.
32 Scarrow, "By-Elections and Public Opinion," 87.
33 Although the regression coefficients of shifts in turnout upon Conservative change between T2 and T3 was .190, most beta weights were below .10.
34 The timing variable was dichotomized such that between T1 and T2 the by-elections categorized as close to the previous election were those held within 25 months of T1. Between T2 and T3, contests defined as close to the following general election occurred within 22 months of T3.

between T1 and T2 and 2.34 from T2 to T3.[35] As with the voter turnout variable, the use of election timing in simple linear regression equations predicting vote change also produced coefficients that were generally low.[36]

TABLE 5

MEAN PERCENTAGE ABSOLUTE SHIFT BY PROXIMITY OF ELECTION TIMING

	T2 - T1 (147 cases)		T3 - T2 (101 cases)	
	Near	Distant	Near	Distant
Liberal	9.30	11.62	8.09	10.00
Conservative	10.00	12.85	8.39	10.09
NDP	4.60	7.03	4.97	7.71
Socred	3.19	4.11	2.80	6.38
Other	6.82	4.79	1.74	3.50
Summary mean	6.78	8.08	5.20	7.54

Having addressed some of the factors that influence the by-election process, it seems appropriate to return to the question asked at the outset of the article, and to try to make a general assessment of the utility of by-elections as indicators of Canadian voting. In other words, just how well do these interim contests serve as predictors of subsequent general elections? In the pursuit of this exercise, the most productive tool in developing a predictive model of the subsequent general election vote (T3) should be the use of regression analysis. A comparison of the preceding election (T1) relative to the by-election (T2), when entered into separate linear regression equations, can provide evidence as to whether by-elections really are more useful in forecasting future events.

Table 6 furnishes summary regression coefficients for three different levels of data. The left-hand column, dealing with the constituency level, shows a uniform pattern for all parties of by-elections providing better predictions of T3 than do the previous general elections. The standardized beta weights vary from party to party with the forecasting accuracy being greatest for the NDP, a reflection of the relative stability of that party's vote. Interestingly, however, by-elections provide only a slightly better predictive model of the NDP vote, whereas for the Other party category, they produce a dramatic improvement.

35   Scarrow's findings ("By-Elections and Public Opinion," 88) were inconsistent with the hypothesis, but were based upon more crudely derived indicators than used here.
36   The single highest regression coefficient was .276 predicting Social Credit change between T2 and T3, but most were no higher than .15.

TABLE 6

COEFFICIENTS OF SIMPLE REGRESSION EQUATIONS PREDICTING PARTY
VOTE AT T3

	Constituency	Province	Nation
Liberal T1 → T3	.656	.541	.296
Liberal T2 → T3	.689	.533	.211
Conservative T1 → T3	.695	.564	.390
Conservative T2 → T3	.765	.604	.466
NDP T1 → T3	.834	.679	.219
NDP T2 → T3	.860	.672	.200
Socred T1 → T3	.613	.563	−.095
Socred T2 → T3	.745	.530	−.080
Other T1 → T3	.229	.613	.345
Other T2 → T3	.829	.705	.445

By necessity, these figures are derived from the subset of 101 cases
for which there were full data, and pertain to predictive capacity in the
same constituencies where the by-elections were held. However, the
question might arise in evaluating such results as to what extent they can
be generalized beyond the constituency. Table 6 offers further
regression coefficients resulting from equations relating T1 and T2 with
the provincial and national results at T3. Not surprisingly, as the area to
which conclusions are being drawn expands over larger geographic
units, the predictive accuracy of the prior constituency results for both
T1 and T2 declines in most cases. Beyond the constituency level, there
is no apparent pattern indicating the predictive superiority of either T1
or T2.

An attempt was also made to assess the relative impact of the
variables discussed in the study through the generation of a series of
multiple regression equations. These involved dependent variables
corresponding to the parties' vote shifts during the different electoral
intervals that were regressed upon region, incumbent governing party,
change in the rate of voter turnout and length of time between elections.
Individually there were a number of regression coefficients that showed
considerable strength.[37] However, there appeared to be little consis-
tency across parties in the ordering of independent variables by the
magnitude of their predictive capacity.

[37] The strongest simple correlation coefficient occurred when change in turnout
provided a beta weight of .484 in predicting variation in the Conservative vote
between T2 and T3. The multiple correlation coefficient in that particular equation
was .601.

Summary

To review the basic findings of the study, attention was paid to the impact of various political factors unique to by-elections. Because of these idiosyncratic conditions, the value of the interim votes as indicators for the future was questioned. However, net party shifts shown in Table 1B and linear regression equations in Table 6 demonstrated that the by-elections were better indicators of future voting than were previous general election results. In order to account for factors distinctively associated with by-elections, a series of hypotheses was generated. These related to the ability of parties to concentrate resources, to regional differences, to dissatisfaction with incumbent governments, to voter turnout, and to the temporal proximity of by-elections and general elections.

In general, the evidence seemed to corroborate the various hypotheses, suggesting an intrusion into the by-election process of factors not present in nationwide votes. Included among these divergent characteristics are improved performance for the NDP and Others; greater patterns of change west of Quebec; a strong incidence of rejection for the party in power; as well as increased variation in contests typified by change in turnout and distance from the general election. The reconciliation of the various pieces of evidence indicates that by-elections are subject to different pressures than general elections. However, once they take place, these distinctive considerations are etched into a constituency's political consciousness, at least temporarily, and become a factor in subsequent electoral contests. Of course, it would require the availability of individual-level data fully to test these suggestions.