Candidate competition and strategic coordination: evidence from four early Norwegian elections

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Abstract

This article investigates strategic coordination in four elections to the Norwegian Storting (1909–18). The elections were held under a majority-plurality dual-ballot system, with unrestricted participation in the second-ballot. The focus is on elections with Conservative, Liberal and Labour candidates as main contenders. Supported by historical and theoretical arguments, the authors assume universally sincere voting in the first-ballot. Given this assumption, second-ballot elections can be analyzed as regular plurality elections. Hypotheses about behavior are formed using the game theoretic framework of Myerson and Weber (American Political Science Review 87 (1993) 102–114). It is found that while voters follow the predictions of theory fairly closely, the extent of coordination present at the candidate level can be questioned.

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1. Introduction

From 1906 to 1918, a dual-ballot electoral system in single-member districts was used in Norwegian Storting (i.e. national assembly) elections. More precisely, the system employed was a majority-plurality system with unrestricted participation in the second ballot. Such an electoral system invites strategic behavior. According to its opponents, “the single-member district system encouraged opportunistic electoral alliances and compromises, which obscured the fundamental political cleavages”
Opportunism or not, this electoral system provides ample opportunity to study strategic coordination. Such coordination was not limited to the elite level. Haffner and Olafsen’s (1916, 190) comments to the 1915 election statistics makes it clear that coordination also took place at the voter level:

As is well known, the so-called “bourgeois” parties combined, to a great extent, against the Social Democrats in the second-ballot. In a number of constituencies, an electoral alliance was formed. In other constituencies, one party withdrew its candidate and voted entirely or largely for the other party. In other constituencies, again, the parties maintained their candidates in the second-ballot, but a distinct transfer from the weakest to the strongest party took place.

There are a number of works on the Norwegian party system and individual parties during this period, but these seldom discuss the strategic use of the electoral system. One exception is Leiv Mjeldheim’s (1978) comprehensive study of the Liberal Party’s constituency organizations. When it comes to competition between parties under the electoral system, the literature is even more sparse. To our knowledge, the only systematic study was carried out by Tertit Aasland (1965), who explored whether candidates stood down after the first-ballot in favor of a better-placed ally. In her concluding remarks, Aasland (1965, 296) mentioned strategic coordination at the voter level as an interesting question for future research:

Where parties or candidates did not themselves arrange for a reduction of the alternatives in the second-ballot, did the voters take the matter into their own hands? To what extent did voters transfer to another party in the second-ballot; voters who could hold on to their preferred party, but chose to opt for the second best for tactical reasons?

This article attempts to answer Aasland’s question, by studying strategic coordination at both voter and candidate levels. At the candidate level, conditions that encourage the first-ballot loser to step down before the second-ballot are explored. At the voter level, an effort is made to identify conditions that make the voters take the matter into their own hands and desert the first-ballot loser in the second-ballot.

The article is organized as follows: In the remainder of the introduction, we substantiate a central assumption of the analysis: sincere first-ballot voting. In Section 2 we describe the Norwegian party system during the period 1906–18. The electoral system of the same period is described in Section 3. The assumptions and results from the theory of strategic coordination in single-member district elections is presented in Section 4. Six hypotheses on voter and candidate behavior are formulated on the basis of the theory. In Section 5 these hypotheses are confronted with data. Section 6 sums up our findings and draws some conclusions.

This analysis of strategic coordination is based on an assumption which may seem

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1 Throughout the article, the authors are responsible for the translation from Norwegian.
dubious at the outset, i.e. that first-ballot voting was *universally sincere* in the dual-ballot elections studied. In other words, first-ballot is regarded as a “test election”. Technically, this is a convenient assumption. First, it implies that the second-ballot can be analyzed as a regular plurality election. The theory of plurality elections is well-developed, unlike the theory of dual-ballot elections (as discussed below). Second, this assumption allows us to *quantify* voter expectations as to the winning chances of different candidates, on the basis of first-ballot results. According to the theory of strategic coordination, these expectations are decisive both for voting behavior and the candidates’ decisions to maintain or withdraw their candidacies.

However, mere technical convenience is not sufficient to validate our simplification. There are (at least) three *substantial* reasons for regarding the first-ballot as a test election. The first relates to the specific historical context. The four elections discussed here took place almost a century ago. No opinion polls existed. Newspaper coverage of electoral politics was less developed, and consisted mainly of results from the first and second-ballot (Aasland, 1965, 288). Before the second-ballot, voters were left with two main sources on which they could base their expectations: the reported first-ballot results and the results from the previous Storting election. As regards the latter, a considerable extension of the franchise took place during this period, changing the composition of the electorate considerably. Accordingly, previous results provided voters with a poor predictor of future elections. Moreover, the party system changed substantially between 1906 and 1909. Previous electoral outcomes were thus especially inadequate as predictors in 1909.

The second reason for our simplification is that well-informed observers of that period assumed that first-ballot voting was sincere. Consequently, national election results were only calculated on the basis of the first-ballot vote. Official statistics stated the reasons for doing so. One is told that the tables of voters by party (Haffner and Olafsen, 1907, 136):

> [A]re calculated on the basis of the first-ballot. This is the only feasible basis. Several considerations enter into the second-ballot vote. Quite a number of voters are then forced either to support another party’s candidate or to refrain from participation. There are also many instances of voters who, in the second-ballot, vote for other candidates than their first-ballot choices, even though their original candidates maintain their candidacies at the second-ballot.

All official election statistics under the 1906 electoral system have been produced according to this principle. A voter who forms his second-ballot expectations on the basis of the previous Storting election does not utilize all existing information, if it is known that other voters form their expectations on the basis of the first-ballot. This reasoning, as well as the quoted principle above, indicates that the first-ballot

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2 Increases in the electorate, in terms of percentages for the periods 1906–09, 1909–12, 1912–15 and 1915–18 were for men 3.2, 3.5, 6.1 and 5.4 and for women +/−, 10.2, 85.0 and 5.6
results may be considered as the (only) common basis for expectation formation under the 1906 electoral system.

The third reason for simplification is based on theory. The 1906 electoral system did not limit the number of candidates in the second-ballot (see below). For a system with unrestricted second-ballot candidacies, the equilibrium is only rudimentarily described in the literature (Cox, 1997, 123–38 and 303–7). However, it has been established that this kind of equilibrium places very strong demands on voters (Cox, 1997, 131, n 7). There is reason to doubt that the average voter would be capable of acting in full accordance with the theory of dual-ballot elections, without restrictions on second-ballot candidacies (p. 132). This factor weighs against an analysis of strategic voting in dual-ballot elections.3

2. The Norwegian party system from independence to World War I

Norway’s first organized political parties—the Liberals (Venstre) and the Conservatives (Høyre)—emerged within the Storting during the struggle over parliamentary government in the 1880s. The Labour Party (Arbeiderpartiet) was founded during the same decade, but did not achieve representation in the Storting until 1903. Up until 1905 when Norway’s union with Sweden was dissolved, Norwegian politics revolved largely around relations with Sweden. The political agenda changed radically when Norway achieved its independence, which led to a major restructuring of the party system.4

The Liberal Party comprised three main factions: the right, the left, and the center (Nordby, 1983). The left wing included a separate party: the Labour Democrats (Arbeiderdemokratene). This group had its own party organization, but cooperated closely with the Liberals in elections and in the Storting (Aasland, 1961, 1965, 284–6; Mjeldheim, 1978, 271–6). The right wing sought a broad non-socialist coalition with the Conservatives, whereas the left wing hoped for a coalition between radical Liberals and the Socialists. When the Labour Party rejected the idea of a broad radical coalition, the left-wing and centrist Liberal factions joined forces. The Liberal Party was “consolidated” in 1908, when the right wing was forced to leave the party. The right wing set up a new party—the Progressive Liberals (Frisinnede Venstre)—that entered into electoral alliances with the Conservatives (Kaartvedt, 1984, 299–304; Aasland, 1965, 282–4). A number of interest groups, such as linguistic and religious groups and the temperance movement, were also involved in the elections. Although these groups sometimes put up their own candidates, they mostly served as pressure groups (Mjeldheim, 1978). One of these interest groups, the Farmers Union, ultimately founded its own party (Aasland, 1974).

There are a number of distinctive features that can be discerned behind this myriad

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3 Fully strategic behavior means that all voters cast their vote optimally in both ballots, given their expectations about the voting behavior of all the other voters in both ballots, and their beliefs about the winning chance of every candidate in both ballots.

4 For a review of Norwegian political history during this period, see e.g. Rokkan (1967).
of parties and factions. In 1906—after the dissolution of the union with Sweden—the party system was in a state of flux. From 1909 onwards, however, there were three main groups: the Conservatives (with the Progressive Liberals), the Liberals (with the Labour Democrats), and the Labour Party. In the following analysis each of these groups will be treated as a single party. Even though the same three competitors dominated Norwegian politics from 1906 to 1918, the nature of party competition changed. The Labour Party gained ground and became radicalized (Bjørnson, 1994). The reformist faction lost control at the 1918 party congress, and Labour joined the Communist International in 1919. In short, the polarization between Labour and the non-socialists was increasing (see Nordby, 1989, 54).

3. The electoral system 1906–18

The Norwegian Constitution of 1814 prescribed indirect parliamentary elections. Within each multi-member constituency, MPs were selected by an electoral college on a winner-take-all basis. When political parties emerged during the 1880s, the problematic features of the old system became evident: it caused considerable disproportionality, and the indirect procedure was cumbersome (Kristvik and Rokkan, 1966, 4–9). A majority system with single-member districts was adopted by the Storting in 1905, and used for the first time in the 1906 election. A total of 123 constituencies (126 in 1918) elected a representative and a deputy. If a candidate obtained a majority in the first-ballot, he was elected. If not, a new ballot was held. The candidate who got a plurality of the second-ballot vote was the winner. This method is similar to the present French electoral system, with one important difference. Candidacies in the second-ballot are restricted in France; the threshold for standing in the second-ballot is 12.5 percent of the registered electorate. With 69 percent turnout, as in the 1993 election, this threshold translates into 19 percent of the vote (Farrell, 1997, 40–42). In the 1906 Norwegian system, second-ballot candidacies were unrestricted. Thus, the parties were free to decide whether they should maintain their candidacies in the second-ballot, and perhaps replace an unpopular candidate with a more attractive one. Even parties without participants in the first-ballot could field candidates in the second.

Like its predecessor, the 1906 system caused disproportionality. It proved most disadvantageous to the Labour Party, which became increasingly under-represented.

5 The 1906–18 electoral system and its consequences are described by Aasland (1965) and Kristvik and Rokkan (1966, 9–12). For a thorough study of the debate on the introduction of this system, see Kristvik (1953, 118–62).

6 Restrictions on candidacies were, however, discussed before the system was introduced. The governmental Electoral Commission proposed a majority-runoff system, where the second ballot was held between the two candidates who got the highest number of votes. In the government’s motion, no restriction was proposed. This issue caused considerable disagreement in the parliamentary committee. The Liberals supported unrestricted second-ballot candidacies, whereas the Conservatives were opposed to the dual-ballot system. The Liberal motion was carried (Kristvik, 1953, 140–5).
during the period (Aasland, 1965, 293–4). Proportional representation was adopted by the Storting in 1920 with little opposition. Although the non-socialist parties had benefited from the 1906 system, they recognized that its unfairness contributed to the radicalization and alienation of the Labour Party. It was the non-socialists’ hope that electoral reform would strengthen Labour’s non-revolutionary faction (Danielsen, 1984, 18). Moreover, the non-socialists realized that the majority system might ultimately give the advancing Labour Party a dominant position. For the Liberals, according to Rokkan (1970, 158), “the decisive motive was clearly not a sense of equalitarian justice but the fear of rapid decline with further Labour advances across the majority threshold”.

The 1906 system encouraged various kinds of strategic behavior. First, it gave interest groups both a need to act strategically, and an opportunity to do so. Previously, interest group representation was secured by ticket-balancing in multi-member constituencies. In 1906, interest groups essentially became empowered to conduct blackmail. They could field their own candidates—or threaten to do so—unless the other candidates gave in to their demands (Mjeldheim, 1978, 176–81). Second, neither Conservative nor Labour candidates actually competed in many rural constituencies. Thus, the first-ballot—and sometimes also the second—functioned as a primary election between various Liberal candidates (Mjeldheim, 1978).

Even more interesting, however, is the competition between the three main parties. The dual-ballot system establishes strong incentives to enter into electoral alliances. This is widespread in France, where candidates often stand down in favor of a better-placed ally. Between 97–99 percent of the French second-ballots between 1978 and 1993 were duels, where only two candidates remained (Goldey, 1993, 306). To some extent, this kind of cooperation also took place under the Norwegian 1906 system. Nevertheless, the three main parties usually maintained their candidates in the second-ballot (Aasland, 1965, 280–8). This point will be discussed in more detail later. First, it is important to look at some factors that prevented the parties from utilizing their cooperative potential.

Class antagonisms were acute during this period, and the labour movement was hostile to bourgeois society. Labour’s Party congress in 1906 passed a resolution that rejected electoral alliances:

Because it is vital to ascertain the strength of the party and the number of social democratic voters in the Storting election, candidates must be fielded in every constituency where the party has a branch. Electoral alliances with other parties or men outside the party shall not take place, neither in the first- nor in the second-ballot.7

This anti-cooperation policy was maintained in subsequent elections (Aasland, 1961, 104). With regard to the Liberals and Conservatives the cleavages were too deep for them to build an anti-socialist front. The Liberal Party tried to balance between

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7 Quoted in Aasland (1961, 166). See also Bjørnson (1994, 233).
the blocs and keep its distance from both competitors (Bjørklund, 1984, 179–84). Cooperation was rejected by the Liberal Party congress in 1908:

In accordance with its traditions, the Liberal Party maintains its position as an independent national and democratic party, and will not enter into any political or parliamentary alliance, neither with the Conservatives nor the Socialists.8

4. Voting equilibrium

According to Duverger (1955), instrumental voters in single-member districts provide positive vote shares to no more than two of the candidates running. The mechanism at work is strategic voting: higher ranked candidates with lower expected vote shares are abandoned to the benefit of lower ranked candidates with higher expected vote shares.

Standard game theory suggests exceptions to this law (Cox, 1994, 1997; Myerson and Weber, 1993; cf. Palfrey, 1989). Briefly, situations exist where even perfectly instrumental voters will fail to coordinate their voting in equilibrium, resulting in more than two candidates obtaining positive vote shares. Moreover, the conditions for coordinated and uncoordinated equilibrium behavior are empirically distinguishable, allowing confrontation of equilibrium predictions with electoral data.9

The following takes a brief look at this equilibrium theory; first its assumptions then its behavioral implications. For convenience the discussion is restricted to races with three candidates running. Five simplifying assumptions are central to the equilibrium predictions. We believe the first four of these to be rather innocent. First, voter participation is assumed to be one hundred percent, or—alternatively—one may assume that abstentions are evenly distributed between the candidates running. Second, voters are assumed to be instrumentally rational in their choice of candidates. That is, preferences are only defined over candidates and voters maximize their expected utility when casting their votes. Third, voters are assumed to have rational expectations. This requirement places some mild restrictions on voting behavior, ensuring that it does not contradict voter beliefs and expectations. Fourth, candidates are assumed to have fixed policy positions on relevant issues. Or put differently, candidates are not allowed to adjust policy platforms in order to attract new voters.10

The last simplifying assumption says that voter information about the electoral support of the candidates is based on sources that are public and sufficiently precise. This assumption is far from innocent. Myatt (1999, 2000) has recently shown that, if voters principally form their expectations based on sources of private information,

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8 Quoted in Nordby (1983, 22).
9 In general it is the non-uniqueness of equilibria that forces restrictions on our data set.
10 Myerson and Weber (1993, 109–11) also formulate equilibria where the candidates are allowed to adjust policy platforms. In our study it does not seem reasonable to model spatial mobility, since only a few days elapse between the first and the second ballot in the electoral system of 1906.
there will always exist an uncoordinated equilibrium that is both unique (Myatt, 1999, 30-1) and stable (Myatt, 1999, 31-5).

The empirical implication is as follows: outcomes where more than two candidates obtain substantial vote shares are generally consistent with rationality, provided that private information about constituency-wide factors dominates public information about the same factors. Myatt goes on to argue that uncoordinated outcomes should normally be expected, since voter information commonly will contain a relatively large private component of relevance (Myatt, 1999, 26):

...it is information on the district level candidate support that is of interest. Opinion polls are rarely conducted at the district level in countries such as the United Kingdom, and hence it is perhaps privately observed information that is of more importance.

This argument, however, does not apply to the elections studied in this article. As argued at length in Section 1, a reasonable supposition is that voters in these elections had to base their expectations of district level candidate support on one common and public source of relevant information: The district level results in the first round of voting. In practice no other sources of information were available. Thus, public information dominated private information in these elections, and it is reasonable to proceed with the hypotheses generated by standard (pre Myatt) theory (that is, the hypothesis of Cox 1994, 1997 and of Myerson and Weber, 1993).

In the standard theory equilibrium predictions are based on six variables. The first five of them are explanatory: (i) The electoral system; (ii) voter preferences over candidates; (iii) voter beliefs about other voters’ preferences over candidates; (iv) voter expectations about the vote shares of the candidates, and; (v) voter beliefs about the winning chances of the candidates. The last variable is the dependent one: voter behavior. A specific distribution of votes between the candidates is said to have a rational explanation if no voter has any reason to regret his or her vote, given the votes cast by all other voters and the values of (i)–(v). It can be demonstrated that such equilibrium always exists (Myerson and Weber, 1993, 105).

Two kinds of equilibrium are distinguished: coordinated and uncoordinated. In each of them every voter cast an optimal vote, given the expectations formed by all other voters voting optimally. In coordinated equilibrium voter beliefs converge. Every voter believes that the candidate with lowest expected vote share is without winning chances. As a result, he is deserted. Or more precisely: voters with the expected loser as first preference vote strategically for their second preference. Behavior in coordinated equilibrium coincides with Duverger’s law. In uncoordinated equilibrium, voter beliefs do not converge. The two candidates expected to finish last have the same expected vote shares. Neither of them can therefore be ruled out as a “serious” contender for the expected winner. The result is that every voter

\[11\] In most modern elections Myatt’s concern is, of course, valid and should be taken seriously. An example of it being taken seriously is Fisher (2000), who analyzes UK elections over the period 1987–97.
casts a sincere vote for his first preference. Behavior in uncoordinated equilibrium contradicts Duverger’s law.

The ratio of expected vote shares of the candidate finishing last over the candidate finishing next to last can be designated as “the loser competition”. Likewise the ratio of expected vote shares of the candidate finishing next to last over the candidate finishing first can be designated “the winner competition”. Note that both ratios are bounded between zero and unity. For the purpose of this article competition will be designated as “closer” the closer to unity its ratio is.

It can be shown that, in equilibrium, strategic voting depends on how close the loser competition is, but not on how close the winner competition is. The conjecture one is likely to entertain before being exposed to the equilibrium theory is (presumably) that closer winner competition increases the individual voter’s chance of influencing the electoral outcome, providing him or her with an incentive to vote strategically. That no such mechanism is present in a voting equilibrium can therefore be seen as somewhat counterintuitive.

Another implication of the equilibrium theory is—*ceteribus paribus*—that the smaller the utility distance between second and third preferences, the less probable it is that a voter will vote strategically when he expects his first preference to participate in a loser competition.

Voter desertion and candidate withdrawal can be seen as two different responses to the same underlying coordination problem: how to concentrate votes on candidates with a winning chance. Centralized solutions to the coordination problem add to the range of coordination devices available. For instance, it is possible to determine which candidate is to withdraw by lottery. The use of such a device is not practicable for voters in a large electorate. A lottery is not mentioned merely as a theoretical possibility. The use of such a device in the electoral system of 1906 has been documented, albeit infrequently (Aasland, 1965, 288):

A common meeting of Liberals and Conservatives in a district in Smaalenene County chose to decide the candidate question by means of a lottery, but this was probably not a common procedure.

That candidate withdrawal plays an *especially* prominent role in cases with close loser competition not an unreasonable conjecture. In such cases it is particularly difficult to achieve decentralized coordination. A withdrawal, on the other hand, simplifies the coordination problem of the voter radically, thereby avoiding wasted votes.

5. Confrontation with electoral data

A total of 618 representatives were elected to the Storting in the electoral system of 1906. Of these, 342 representatives (55.3 percent) received their mandates after a second-ballot. The following discussion concentrates on the elections in 1909, 1912, 1915 and 1918, where the party system was fairly stable. These four elections
gave 495 representatives their mandates, of which 272 (54.9 percent) had to go through a second-ballot.

In the following analysis, certain restrictions have been applied which limit the data set. First, only elections that were settled after a second-ballot have been analyzed. The reason for this is apparent: The purpose here is to study strategic voting, and it is assumed that first-ballot voting was sincere. Second, a decision was made to consolidate the votes for different candidates over parties in the first-ballot, but not in the second. The reason for this is as follows: Dispersion of votes on candidates from the same party in the first-ballot indicates that the party’s nomination process did not result in a clear choice. Dispersion of votes on candidates from the same party in the second-ballot (in the rare cases where this happened) does not indicate a continuation of the nomination process, but constitutes an ultimate competition for the mandate between candidates from the same party. Third, only elections where at least one Labour, one Liberal and one Conservative candidate participated in the first-ballot, and where at least two of these candidates also participated in the second-ballot have been included. This allows us to study three-candidate competitions between unitary national parties. The above restrictions reduce the data set to 223 elections. The fourth, and final, restriction is that elections where the total vote share of the three main contenders (Labour, Liberal and Conservative) was less than 90 percent of total votes in the first and second-ballots have been omitted. This makes it possible to analyze elections where the primary competition was between candidates from these three parties, which were the only three unitary national parties at the time. This brings the number of elections in the data set down to 191, 70.2 percent of the elections that ended in a second-ballot during the 1909–18 period. In each of these cases three unitary national parties competed for a mandate that was awarded in a second-ballot.

Table 1 shows how often the three parties held the losing position in the first-

<table>
<thead>
<tr>
<th>Loser position in the first-ballot (N)</th>
<th>Withdrawal before the second-ballot (N)</th>
<th>Withdrawal before the second-ballot (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative</td>
<td>54</td>
<td>13</td>
</tr>
<tr>
<td>Liberal</td>
<td>52</td>
<td>19</td>
</tr>
<tr>
<td>Labour</td>
<td>85</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>191</td>
<td>54</td>
</tr>
</tbody>
</table>

Table 1 shows how often the three parties held the losing position in the first-

12 Data were collected from Haffner and Olafsen (1910, 1913), Haffner and Ottersen (1916) and Haffner and Wessel-Berg (1919). It should be noted that Conservatives/Progressive Liberals and Liberals/Labour Democrats are regarded as single parties (cf. Section 2). In 1918 the candidates from the Farmers Union (Landmannsforbundet) in seven districts are counted as Conservatives. In these districts the Conservatives did not run their own candidate, and in each of these cases the electoral statistics documents that the candidates from the Farmers Union were run with the consent of the Conservatives.
According to the figure above, the candidates holding the losing position after the first-ballot withdrew from the second-ballot in 28 percent of the cases. Furthermore, Labour candidates held the losing position in the first-ballot in 45 percent of the cases (85 out of 191 elections), while the corresponding figures are 28 percent for Conservatives and 27 percent for Liberals. However, a larger proportion of Liberal candidates that held the loser position in the first-ballot withdrew (37 percent), than is the case for similarly situated Labour candidates (26 percent) and Conservative candidates (24 percent).

With one exception, the variables in the analysis are based on the vote shares of the candidates in the first- and second-ballots. The exception pertains to the indexes of political substitutability used here. Construction of these indexes are based on registered roll-call votes in the plenary assembly of the Storting over the period 1909–18 (Nordby, 1983, 244–5; 1989, 52). The data makes it possible to compute the extent to which representatives in a pair of parties voted for the same or different alternatives during a given year. The substitutability indexes have been devised as follows. Label the three parties $i$, $j$ and $k$. Let $AVG'(i,j)$ denote the average percent of the votes taken in which party $i$ and party $k$ voted for the same alternatives during period $t$. This average has been computed for each of the six pairs of parties in four different periods: 1907–09, 1910–12, 1913–15 and 1916–18. Each period consists of an election year and the two years preceding the election year. It is assumed that each average expresses an agreement score between a pair of parties, as judged before the election at the end of the period in question. The index of political substitutability for party $i$ is computed in the following way:

$$\text{POLSUB}_i = \frac{AVG'(i,j)}{\max\{AVG'(i,j), AVG'(i,k)\}}$$

In the computation the largest of the two averages figures is the denominator of the ratio. This restricts the indexes to values in the region $[0,1]$. Thus, an index indicates the degree to which the two other parties served as “substitutes” for the party in question over a given period. Index values for the three parties over the

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13 The roll-call data only cover voting in the plenary assembly. One cannot rule out a possible bias due to the fact that votes taken in committees and chambers are excluded. Another possible bias is due to the fact that the viewpoints expressed may be subsidiary, in cases where more than two alternatives are motioned. Lastly, the possibility of biases being created by unwillingness to put forward losing motions (anticipated reactions) should not be overlooked. The two last sources of bias tend to overestimate the degree of consensus between pair of parties.

14 An alternative would be to use a weighted average. In our analysis we have tried out a measure where the first year in the period is weighted by 0.1; the second year by 0.3 and the last year by 0.6. The reasoning behind this is that the near past is more present than the more distant past. The weighted average does not give results that are substantially different from a non-weighted average.
four periods are given in Fig. 1. The figure indicates, for example, that Conservatives and Liberals were far more substitutable allies for Labour over the period 1913–15 (POLSUB$^{1913-15}_{LABOR} = 0.93$), than they were over the period 1910–12 (POLSUB$^{1910-12}_{LABOR} = 0.60$).

In the following, six hypotheses regarding strategic coordination will be tested. Each hypothesis is tested for each of the parties separately. The hypotheses are given in a general (not party specific) form below. Hypotheses one, three and five address strategic coordination at the voter level. Hypotheses two, four and six address strategic coordination at the candidate level.

(I) Effects of loser competition. According to theory, loser competition ought to influence voting behavior. In accordance with the argument in Section 1, it is assumed that voter expectations are formed exclusively on the basis of results in the first-ballot. From this it follows that the smaller the difference is in vote shares between the losing candidate and the next to losing candidate in the first-ballot (the closer the loser competition), the less clear the expectation is that the loser from the first-ballot will be deserted in the second-ballot. The first two empirical implications of the theory are then that:

H.I. The closer the loser competition in the first-ballot, the lower the probability is that the loser from the first-ballot will be deserted in the second-ballot.

![Fig. 1. Political substitutability.](image-url)
H.II. The closer the loser competition in the first-ballot, the lower the probability is that the loser from the first-ballot will withdraw from the second-ballot.

(II) Effects of winner competition. Theory does not support the notion that winner competition will influence voting behavior. According to theory, voters try to form firm expectations based on the loser competition. The difference in votes between the expected winner and the candidate expected to finish second does not enter the rational calculations of the individual voter. Neither does it seem prudent for party elite to try to solve the voter’s coordination problem on the basis of a ratio that does not enter his calculations. Thus, the winner competition should not influence behavior at the elite level either. In this case the predictions of the equilibrium theory is at odds with intuition. The empirical analysis, therefore, opens for a strategic confrontation of equilibrium predictions and intuitions about strategic coordination both at the voter and the elite level. Given our assumptions about the formation of expectations two (counterintuitive) implications follow from theory:

H.III. The closeness of the winner competition in the first-ballot does not affect the probability that the loser from the first-ballot will be deserted in the second-ballot.

H.IV. The closeness of the winner competition in the first-ballot does not affect the probability that the loser from the first ballot will withdraw from the second ballot.

(III) Effects of utility distance. Equilibrium theory says—ceteribus paribus—that a voter whose first preference participates in the loser competition will be less likely to desert his first preference in equilibrium as the utility distance between his second and third preference decreases. In what follows the indexes of political substitutability are seen as rough proxies, capturing the utility distance between the second and third preference of voters having the loser of the first-ballot as first preference. From this follows the two last implications of the equilibrium theory:

H.V. When the substitutability index of the loser in the first-ballot decreases, the probability that the first-ballot loser will be deserted in the second-ballot increases.

H.VI. When the substitutability index of the loser in the first-ballot decreases, the probability that the first-ballot loser will withdraw from the second-ballot increases.

In real elections the assumptions of the equilibrium theory will, of course, not be fulfilled. Firstly, one should not expect all voters to be instrumental. On the contrary, a number of voters can be expected to vote for their first preference independently of his winning chance. Secondly, real voters will have more fuzzy expectations than those assumed in the model. The material presented here also shows mobilization from the first-ballot to the second-ballot. The ramifications of such mobilization are far from clear, and there is accordingly no reason to believe that the relationship between vote shares in the first-ballot and winning chances in the second-ballot are obvious to the individual voter. Thirdly, it is not unreasonable to expect that the parties have long-term goals of building strength at the national level. Maintaining candidacy may signal such a goal, and withdrawal from the second-ballot may thus not be an option for individual candidates running for a disciplined national party. The six hypotheses are for these, and other, reasons formulated as directional, not point predictions.

We start by examining whether the six directional hypotheses are sustained in the material, and find that they are to a reasonable extent. This makes it worthwhile to
proceed, by taking a closer look at the form and strength of the relationships, which provides a better understanding of the determinants of strategic coordination in the 191 elections in our data set.

Fig. 2 might be viewed as a first motivation for the confrontation with data. The distribution in the figure shows the relationship between the loser competition in the first-ballot (the x-axis) and the loser competition in the second-ballot (the y-axis). Only elections where the loser in the first-ballot did not withdraw from the second-ballot have been included. Thus the distribution only provides information about coordination at the voter level. Excluding elections where candidates withdrew before the second-ballot weakens the tendency of the distribution.

The distribution shows the following tendency: increasing loser competition in the first-ballot increases the loser competition of the second-ballot over-proportionately. If voting was sincere in both ballots all the data points would — ceteribus paribus — be on the diagonal. The curve under the diagonal represents a quadratic fit to the data points. From this it is evident that the pressure exerted on the loser in the first-ballot — in terms of voter desertion in the second-ballot — increases with the distance the first-ballot loser is trailing behind the candidate with the second largest vote share in this ballot. This observation is in accordance with what one would expect from the equilibrium theory. However, the relationship is not controlled for other relevant variables. In what follows we conduct such controls.

For convenience we introduce some notation. In the equations that follow candidates are labeled by their vote shares in the first-ballot, as ranked in descending order. Vote shares of the candidates in the first-ballot are indicated by a "v" in front of the label of the candidate. Thus the loser competition corresponds to the ratio v3/v2, and the winner competition to the ratio v2/v1. In the equations, arabic subscripts refer to candidates, while roman subscripts refer to hypotheses. The
superscript I.II is to be read “from the first-ballot to the second ballot”. Voter coordination is investigated by means of the following logistic regression equation:

\[ Z_{I.II}^{3} = c + b_{I}\left(\frac{v_{2}}{v_{1}}\right) + b_{III}\left(\frac{v_{3}}{v_{2}}\right) + b_{POLSUB}^{3r} + b_{control}^{MOBIL^{I.II}} \]

The dependent variable gives some precision to the term “deserted” as it is used in hypotheses one, three and five. The loser of the first-ballot is considered to have been deserted if he suffered a reduction of 10 percent or more in his vote share from the first-ballot to the second-ballot.\(^{15}\) If the loser from the first-ballot was deserted the dependent variable is coded 1, if not it is coded 0.

There are two reasons for not using a metric dependent variable in this analysis.\(^{16}\) To begin with, the distribution in Fig. 2 more than implies that the relationship under study is non-linear. Secondly, the dependent variable in the study of elite coordination (candidate withdrawal) is a natural binary variable. Forcing a binary dependent variable on the study of voter coordination thus allows comparison of the two levels where coordination can take place.

Now consider the independent variables. As already noted the variables \((v_{2}/v_{1})\) and \((v_{3}/v_{2})\) are the winner competition and the loser competition, respectively. According to hypothesis one, the coefficient of the loser competition should be negative and significantly different from zero. According to hypothesis three the coefficient of the winner competition should not be significantly different from zero. The variable \(POLSUB^{3r}\) is the index of political substitutability ascribed to the loser of the first-ballot. The construction of the index and its interpretation is accounted for above. According to hypothesis five we expect the sign of the coefficient for this variable to be negative and significantly different from zero. The last independent variable is \(MOBIL^{I.II}\). This variable controls for the total mobilization in the district between the first and the second ballots. It is measured as percentage change in the total participation over the two ballots. Such a control is carried out since participation in most elections increases noticeably between the ballots, with an average increase of 15 percent. However, we do not have any clear expectations as to the sign, strength or form of this relationship.

A logistic regression equation has been calculated for each of the three parties. In each equation the party in question holds the losing position in the first-ballot. For each of these equations hypotheses one, three and five may be summed up as follows: \(b_{I} < 0\), \(b_{III}\) is insignificant and \(b_{V} < 0\). Results are shown in Table 2. The table shows that hypothesis one (closer loser competition reduces the probability of the first-ballot loser being deserted) and hypothesis three (winner competition does not influence the probability of the first-ballot loser being deserted) are not refuted.

\(^{15}\) Qualitatively speaking the same results are obtained if the cut is placed at 15 percent, 25 percent or 50 percent reduction in vote share from the first to the second ballot.

\(^{16}\) Data, of course, allow one to use a metric dependent. For instance the cut at 10 percent reduction and the adjoined binary dependent, could be eliminated simply by defining the dependent as the percentage reduction from the first to the second-ballot.
Table 2
Party-specific coefficients: voter desertion

<table>
<thead>
<tr>
<th>Party</th>
<th>Conservative</th>
<th>Liberal</th>
<th>Labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.3</td>
<td>4.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Loser competition</td>
<td>-9.9**</td>
<td>-7.7**</td>
<td>-5.3**</td>
</tr>
<tr>
<td>Winner competition</td>
<td>4.2</td>
<td>4.4</td>
<td>-3.7</td>
</tr>
<tr>
<td>Political substitutability</td>
<td>12.4*</td>
<td>-2.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Mobilization</td>
<td>-8.6*</td>
<td>-3.6</td>
<td>-0.4</td>
</tr>
<tr>
<td>Pct “correct” predictions</td>
<td>80.5</td>
<td>75.9</td>
<td>69.7</td>
</tr>
<tr>
<td>Pseudo-$R^2$</td>
<td>35.9</td>
<td>28.6</td>
<td>24.3</td>
</tr>
<tr>
<td>$N$</td>
<td>41</td>
<td>29</td>
<td>66</td>
</tr>
</tbody>
</table>

*Sig. 10%; **sig. 5%.
by the data for any of the three parties. Hypothesis one cannot be refuted at the five-percent level. The results are quite convincing. The results for hypothesis five (decreasing utility distance reduces the probability of the first-ballot loser being deserted) are less impressive. In two of the equations (Conservatives and Labour) the relationship has the wrong sign, and in one of these (Conservatives) it is also significantly different from zero at the ten-percent level (this rebuttal is commented further below). The model fits adequately, with “correct” predictions in the area 70–80 percent and pseudo-$R^2$ between 25 and 36 percent.

To evaluate the strength and form of the relationships the logistic regression results must be interpreted as probabilities. These probabilities can be seen in Fig. 3. In the figure, loser competition in the first-ballot is allowed to vary over its range (that is in the interval [0,1]). Winner competition in the first-ballot and the indexes of political substitutability and mobilization are held at their average values.

The most interesting feature of the probability curves in Fig. 3 is that voters from all three parties seem to obey the requirements of the equilibrium theory in the aggregate. Thus, the probability of desertion increases rapidly for candidates from each of the three parties when loser competition deviates only slightly from unity. Even for a loser competition of 3/4 the probability of a loser in the first-ballot being deserted is around 80 percent. Or in other words; aggregate behavior exhibits the same characteristics as massive strategic voting by individual voters would produce.

Elite coordination is investigated with the following logistic regression equation:

Table 3
Party-specific coefficients: candidate withdrawal

<table>
<thead>
<tr>
<th>Party</th>
<th>Conservative</th>
<th>Liberal</th>
<th>Labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.8</td>
<td>16.2**</td>
<td>4.6</td>
</tr>
<tr>
<td>Loser competition</td>
<td>$-3.3**$</td>
<td>$-4.9*$</td>
<td>$-5.7**$</td>
</tr>
<tr>
<td>Winner competition</td>
<td>1.4</td>
<td>-3.8</td>
<td>3.4</td>
</tr>
<tr>
<td>Political substitutability</td>
<td>$-7.5$</td>
<td>$-15.1**$</td>
<td>$-7.0**$</td>
</tr>
<tr>
<td>Mobilization</td>
<td>$-5.5*$</td>
<td>$-16.4**$</td>
<td>$-6.1**$</td>
</tr>
<tr>
<td>Pct “correct” predictions</td>
<td>79.6</td>
<td>86.5</td>
<td>84.7</td>
</tr>
<tr>
<td>Pseudo-$R^2$</td>
<td>14.3</td>
<td>38.5</td>
<td>35.9</td>
</tr>
<tr>
<td>$N$</td>
<td>54</td>
<td>52</td>
<td>85</td>
</tr>
</tbody>
</table>

*Sig. 10%; **sig. 5%.

17 The label “correct” in Tables 2 and 3 refers to the percentage of correct predictions when the cut of correct predictions is set to 50 percent. Counted in this way our predictions are correct in between 70 and 80 percent of the cases. The “pseudo $R^2$” presented is based on a chi-square statistics, and its details are set out in Aldrich and Nelson (1984, 57–8). In all of our equations this measure is more conservative than the pseudo $R^2$'s routinely reported in the SPSS package (Nagelkerke and Cox & Snell). The use of a conservative measure is grounded in the fairly low $N$ of the equations.
In this case the dependent is a natural binary variable. It is coded 1 if the losing candidate from the first-ballot withdrew before the second-ballot, and 0 if he did not withdraw. The independent variables are defined in precisely the same way as above. For each of the three parties, hypotheses two, four and six are then—by the same logic as for voter coordination—as follows: $b_{HI} < 0$, $b_{IV}$ is insignificant and $b_{VI} < 0$. Results are shown in Table 3.

Table 3 demonstrates that hypothesis two (closer loser competition reduces the probability of the first-ballot loser withdrawing) cannot be refuted in the data. The results are strong for this hypothesis. Hypothesis two cannot be refuted at the 5 percent level for Conservatives or Labour, and it cannot be refuted at the 10 percent level for Liberals. Hypothesis four (winner competition does not influence the probability of the first-ballot loser withdrawing) is supported in the data; the relationship is insignificant for all three parties at conventional levels (5 or 10 percent). Political substitutability, however, gives more reassuring results on the elite level than it did on the voter level. Thus, the relationship conjectured in hypothesis six (decreasing utility distance reduces the probability of the first-ballot loser withdrawing) has the right sign for all three parties, and it cannot be refuted at the 5 percent level for two of the parties (Liberals and Labour).

It comes as no great surprise that the indexes of political substitutability are better predictors at the elite level. After all the indexes are based on the voting behavior of party delegates in the Storting. While running candidates may have strong incentives to acquire knowledge about the voting behavior of parliamentary parties, the average voter presumably has few such incentives. It seems reasonable to suppose that candidates use their knowledge in forming beliefs about political substitutability. It should also be noted that mobilization is to the disadvantage of the expected loser. This applies to all three parties, and the relationships are significant. Again, the model seems to fit. Percent “correct” predictions lie between 80 and 85 percent, while pseudo-$R^2$ lies between 15 and 39 percent.

Fig. 4 shows comparable probability curves for the three parties. Loser competition again varies over its range, while the other independent variables are held at their (party) mean. From the figure we see that Liberal and Conservative candidates are somewhat more likely than Labour candidates to withdraw from the second-ballot for any value on the loser competition. Furthermore, Conservative candidates are more prone to withdraw than Liberal candidates for any value on the loser competition.

Comparison of Figs. 3 and 4 demonstrates that the probability of strategic withdrawal of candidates is much less sensitive to loser competition than is the probability of strategic desertion of candidates. This may seem a bit surprising. Viewed from the equilibrium theory, candidate withdrawals would be more likely when voter expectations were unclear, i.e. at high levels of loser competition. In such situations one would expect elites to solve the coordination problems of their voters by arranging the strategic withdrawal of a candidate, and thereby preventing votes being
Comparison of the probability curves in Figs. 3 and 4 shows that the opposite is the case: in cases where candidates are withdrawn, there is firm reason to believe that voters would have eliminated the candidate anyway. Coordination at the elite level, thus, does not seem to function as the kind of “voter help in knife-edge situations” that the theory seems to imply.

6. Conclusions and final remarks

This article has analyzed strategic coordination at the voter and elite levels in four early elections to the Storting over the period 1909–18. These elections were held in single-member districts with one or, if necessary, two ballots. There were no restrictions on participation in the second ballot. In the analysis it was assumed that voting in the first-ballot was sincere, and that first-ballot results were the only reliable basis for the formation of expectations. Historical and theoretical arguments supported this assumption. The assumption, furthermore, made it possible to quantify voter expectations regarding the winning chances of the candidates. With this as a point of departure 191 second-ballots were analyzed as if they were single member
plurality elections. In these elections the fight for mandates stood between three well defined, parliamentary parties: the Conservative, Liberal and Labour parties.

The relationship between institutional arrangements and political behavior forms the nucleus of the analysis. The authors have sought to outline the strategic behavior of candidates and voters, conditioned by a specific electoral system. Norway’s political history, with changing electoral laws, provides fertile ground for these kinds of studies. As we have seen, electoral statistics provide a rich data source for the study of electoral behavior, even for periods prior to the era of voter surveys.

Viewed as directional predictions, there was fairly good support for the implications of the equilibrium model in the data. At both the elite and the voter level the amount of strategic coordination decreased as loser competition increased. The winner competition, on the other hand, showed no significant relationship with either voter or candidate behavior. This is in accordance with the equilibrium theory, but at odds with common intuition. Thus, it is the theory—not intuition—that gains credibility in the test. With regard to political distance between parties, increasing substitutability of the two competing parties decreased the probability of candidate withdrawal from second-ballots where they were expected losers—as expected in theory. At odds with theory, no similar relationship was found between substitutability and the voters’ tendency to desert expected losers. It was argued that this might have to do with the fact that political substitutability was measured by roll-call votes. If this is true, the analysis meets a validity problem here.

An investigation of the strength and form of the relationships showed that voters from all three parties behaved in general accordance with theory. Repeated resolutions at Labour’s party congresses about non-cooperation in elections, did not produce the desired effects at the voter level. The behavior of candidates from all three parties, on the other hand, showed marked deviations from the dictums of the equilibrium theory. It was expected that candidates would withdraw in knife-edge situations, where individual voters would have particular difficulty in forming clear expectations and where the danger of coordination failure therefore was imminent. However, the opposite proved to be the case: There was a low probability of withdrawal in such knife-edge situations.

Reluctance to withdraw may be viewed as an attempt to circumvent Duverger’s law. However, the data provides ample reasons to suspect that such attempts are futile: voters tend to desert expected losers who do not withdraw. Why, then, do candidates who are expected to lose decide to maintain their candidacies in expensive races? No attempt is made to answer this question, but a few suggestions can constructively be put forward.

In an electoral system like the one analyzed, a pair of parties may negotiate electoral alliances centrally, securing representation for both parties. As far as is known,
no such alliances were formed in the period studied. Labour’s radical program was an obstacle to alliances with the non-socialist parties. Economic and cultural cleavages between the Liberals and the Conservatives made it difficult to establish extensive formalized alliances between these two parties. Without such alliances, a situation in which three parties compete in a system of dual-ballot elections in single-member districts seems potentially unstable—as it is with plurality elections in single-member districts. The three parties lived dangerously. A fairly limited loss of votes could lead to a substantial loss of mandates. Most exposed was perhaps the Liberal Party, which was squeezed in between the Conservative Party and a Labour Party in growth. The party risked a fate similar to its British sister party: Decimation at the polls.19

In such an environment, resisting strategic withdrawal may constitute a rational response. It maintains the party as an independent and distinct alternative, and supports the long-term goal of building and preserving a national party. Strategic withdrawal of candidates, on the other hand, risks branding the party as the tail-end of a competing party. Securing the long-term goal may be more important than obtaining the mandate for a second preference over a third preference.

Neither should one overlook the situation of the candidates in the individual constituencies. An expected loser might be given ample reason to withdraw if offered a deputy position from a candidate with a higher expected vote share. If not, he himself has little to lose by not withdrawing. However, a certain deputy position must be weighted against possible increases in the candidates own vote share caused by mobilization from the first- to the second-ballot, and against the wish to increase his own vote share in future elections.

In sum, both parties and candidates may have other and more long-term goals than assumed in the equilibrium theory. Voters are less likely to care much about the future of a party, and more likely to seek realization of their preferences over the candidates actually running in their district. Thus, it is voters, not elites, that best fulfill the assumptions of the model. Since voters tend to eliminate expected losers who do not withdraw, the observed attempts to circumvent Duverger’s law at the elite level seem futile.

Acknowledgements

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References


19 Cox (1997, 254–65) presents a stimulating discussion of the decimation of the Liberal party in Britain during the inter-war period (in spite of Lloyd George’s battle to avoid this).


