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REPRESENTATION ELECTIONS WITH INTERVENORS:
A BETTER WAY TO DETERMINE THE WINNER

by

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REPRESENTATION ELECTIONS WITH INTERVENORS:
A BETTER WAY TO DETERMINE THE WINNER

Representation elections are an integral part of the framework for collective bargaining created by the National Labor Relations Act of 1935. Section 8(a)(5) of the act forbids a covered employer "to refuse to bargain collectively with the representatives of his employees"; Section 9(a) indicates that representatives should be "designated or selected . . . by the majority of the employees in a unit appropriate for" collective bargaining; and Section 9(c)(1) directs the National Labor Relations Board to resolve "a question of representation affecting commerce" by conducting "an election by secret ballot."[1] Pursuant to these provisions, agents of the NLRB recently have conducted approximately 8,000 representation elections per year.

During the year ended 9/30/80, for example, board agents certified the outcome of 8,198 representation elections. Of the total, 86 percent were RC elections (that is, elections requested by a labor union seeking to represent a group of employees), 11 percent were RD elections (that is, elections obtained by a group of employees disputing the popularity of their certified or recognized representative), and three percent were RM elections (that is, elections requested by a person having employees whom one or more unions claimed to represent). A union won 49 percent of the RC elections, 27 percent of the RD elections, and 21 percent of the RM elections.[2]

Before board agents conduct a representation election, the director of the relevant regional office of the NLRB, or the NLRB itself, approves or chooses a "bargaining unit," that is, a list of jobs whose holders a union will have the right to represent if it wins the election. The list identifies

jobs both by type(s) of work (the "composition" of the unit) and by place(s) and employer(s) (the "scope" of the unit). An individual may vote in an election only if s/he held a listed job during a pay period approved or chosen by the regional director, and the number who do vote averages about 60.[3]

Occasionally a representation election determines not only the representative for a bargaining unit, but also the scope or composition of the unit. For example, if a petitioning union seeks to represent all nonsupervisory employees at an establishment where another union already represents a craft, department, or other unit, then the existing situation continues if the incumbent union receives a majority of the votes cast by individuals holding jobs in the existing unit; otherwise, the bargaining unit at issue becomes all nonsupervisory jobs at the establishment, and either the petitioner or nonrepresentation wins if it receives a majority of the votes cast by all employees (if neither does so, then board agents conduct a runoff election in which all employees may choose between the petitioner and nonrepresentation).[4] The rules for representation elections without a predetermined bargaining unit (called "self-determination" elections) change from case to case, and such elections can have as many winners as there are pools of ballots.

In this paper, we will focus on the normal situation, that is, on elections with a predetermined bargaining unit and at most one winner. We will describe the rules adopted by the NLRB to determine which union, if any, wins such an election, identify some objectionable features of those rules, and suggest a way to correct the deficiencies.

Rules in Force

The rules adopted by the NLRB to determine the outcome of a representation election for a predetermined bargaining unit fall into two groups--those that produce a tally of ballots and those that assign an outcome to a tally.

Rules that produce a tally

After closing the polls and encouraging representatives of the parties to remove or sustain challenges to voters' eligibility, board agents commingle, unfold, display, segregate, count, and package the ballots submitted and complete Form NLRB-760, Tally of Ballots. On the form, they report the number of people eligible to vote and the number of challenged ballots, void ballots, and votes cast for each alternative. Behind the number of void ballots and the number of votes cast for each alternative lie five rules.

1. Board agents must prepare an official ballot for each election and include on the ballot the name of every union that qualified as a sole petitioner, joint petitioner, cross petitioner, or intervenor in the election and the name of any union that currently represents the bargaining unit involved and did not disclaim interest in the election.[5] In a representation election, unlike an election that confirms or rejects an appointee, there is no ceiling on the number of alternatives appearing on the ballot.

2. The offical ballot must direct a voter to choose exactly one alternative.[6] If one union is eligible to win the election, the ballot has a square on the left labelled "yes" and a square on the right labelled "no" and says, "Do you wish to be represented for purposes of collective bargaining by [that union]. Mark an 'X' in the square of your choice." If two or more

unions are eligible to win, the ballot has a square for each union and a square labelled "neither" or "none" and says, "This ballot is to determine the collective bargaining representative, if any, for the unit in which you are employed. Mark an 'X' in the square of your choice." Unlike the ballot used to elect a member of the Australian House of Representatives or the mayor of some American cities, the ballot used in a representation election does not ask a voter to rank the alternatives from most preferred to least preferred.

3. Each valid ballot that voters submit casts one vote for the alternative chosen on the ballot.[7] Seniority and hours of work do not affect an employee's voting power. In corporate and marketing-order elections, in contrast, ballots cast multiple votes.

4. A ballot is valid if it is submitted by a person who is eligible to vote, is received at a designated place and time, contains no means of identifying the voter, and unambiguously chooses an alternative that is eligible to win the election.[8] To prevent an individual from voting more than once, observers check and mark an eligibility list before a board agent gives someone a ballot, and a voter whose name appears on an eligibility list at more than one polling place must cast a challenged ballot; also, duplicate ballots arriving by mail are void.[9] In some popularity contests, in contrast, an individual may vote more than once.

5. A union is eligible to win an election only if its name appears on the official ballot. Unlike public officials and railway unions, representatives covered by the NLRA may not be elected by write-in votes.[10]

Rules that determine the outcome

The NLRB's rules assign one of four outcomes to a tally of ballots: victory for a union, victory for nonrepresentation, a runoff election, or

nullification. In the absence of misconduct by agents of the NLRB or agents of the parties to the election, victory for a union leds to a "certification of representative," and victory for nonrepresentation leads to a "certification of results of election."[11] Either kind of certification revokes any prior certification for part or all of the same bargaining unit and bars another election in the unit for a 12-month period.

We turn now to the rules that determine which of the four outcomes board agents must assign to a given tally of ballots. There are seven such rules.

1. If less than one valid ballot is received, or less than two individuals who are eligible to vote submit a ballot, or less than two individuals are eligible to vote, then the election must be nullified.[12] With those qualifications, a quorum is not required, as it is in representation elections conducted by the National Mediation Board.[13] The NLRB presumes that individuals who have adequate opportunity to submit a valid ballot and do not do so assent to whatever outcome emerges.[14]

2. If at least two individuals who are eligible to vote submit a ballot, then any alternative receiving a majority of the votes cast wins the election.[15] A plurality is not sufficient, as it is to elect a public official; 20 percent is not sufficient, as it is to obtain a roll-call vote in Congess; four-ninths is not sufficient, as it is to obtain certiorari from the U.S. Supreme Court; two-thirds, three-fourths, or some other extraordinary majority is not necessary, as it is for cloture, expulsion, impeachment, constitutional amendment, bond issues, budgets, and closing streets; and an absolute majority is not necessary, as it is to defeat a union shop.[16]

3. If the ballot offers voters a choice between two alternatives and both alternatives receive the same number of votes, then (even if two unions

tied and one of them was an incumbent) nonrepresentation wins.[17] When candidates for public office tie, in contrast, chance may decide the outcome.

4. If (a) the ballot offers voters a choice among three or more alternatives, (b) none of the alternatives receives a majority of the votes cast, (c) two of the alternatives receive more votes than any third alternative receives, and (d) either some votes are received by other alternatives or some individuals eligible to vote do not submit a valid ballot, than board agents must, as soon as possible after waiver or expiration of the period for filing objections, conduct a runoff election.[18] The ballot of the runoff election must offer voters a choice between whichever two alternatives received the largest number of votes in the initial election,[19] and rules 1-3 will determine the outcome. In contrast, the electorate votes only once when Americans elect a public official, and the electorate may vote more than twice when a legislature chooses among alternative versions of a motion or when the House Democratic Caucus elects a majority leader.

5. If (a) the ballot offers voters a choice among three or more alternatives, (b) none of the alternatives receives a majority of the votes cast, (c) two of the alternatives receive the same number of votes, (d) the other alternatives receive no votes, and (e) all individuals eligible to vote submitted a valid ballot, then (even if two unions tied for first place and one was an incumbent) nonrepresentation wins.[20]

6. If (a) the ballot offers voters a choice among three or more alternatives, (b) none of the alternatives receives a majority of the votes cast, and (c) three or more alternatives tie for first place, then the election must be nullified and (unless it was itself a rerun of a tie) must be rerun as soon as possible.[21] Pending a conclusive election, the incumbent alternative continues, but it is not protected by an election bar.

7. If (a) the ballot offers voters a choice among three or more alternatives, (b) none of the alternatives receives a majority of the votes cast, and (c) one alternative leads and two or more alternatives tie for second, then the election must be nullified and (unless it was itself a rerun of a tie) must be rerun as soon as possible.[22] The incumbent continues but is not protected by an election bar.

You now know the rules used by the NLRB both to produce a tally and to determine the outcome. Before continuing, you might list any objections you have to these rules. Then you can see how you would have written our next section.

Deficiencies of the NLRB's Rules

In approximately 5 percent of the representation elections conducted by agents of the NLRB, voters choose among three or more alternatives.[23] In these cases, the rules used by the NLRB to determine the outcome of an election have two characteristics that we regard as objectionable. The first is a procedural inefficiency; the second, a substantive inefficiency.

1. The NLRB's rules may make it impossible to determine the outcome of an election without conducting a runoff election. Conducting a runoff election delays resolution of the crisis associated with a representation case and imposes a second round of costs on unions, employers, employees, and taxpayers. Approximately 8 percent of representation elections involving three or more alternatives result in a runoff election.[24]

2. The NLRB's rules may deny victory to a Condorcet alternative, that is, to an alternative that would have won a runoff against each of the other alternatives, including whichever alternative wins (or at least continues) under the NLRB's rules.[25] Simulation of elections by computer indicates that

a Condorcet alternative exists in about 98 percent of elections with three alternatives, about 96 percent of elections with four alternatives, and about 95 percent of elections with five alternatives,[26] and that rules like the NLRB's will fail to select that alternative in about 5 percent of elections with one Condorcet alternative and two others, about 10 percent of elections with one Condorcet alternative and three others, and about 19 percent of elections with one Condorcet alternative and four others.[27] The probability that the NLRB's rules will deny victory to a Condorcet alternative, accordingly, is about .05 with three alternatives, about .10 with four, and about .18 with five.

To explain why the NLRB's rules may deny victory to a Condorcet alternative, we will present seven examples, one for each rule used by the NLRB to determine the outcome of an election. In each example, we will assume that the official ballot offers voters a choice among three alternatives, namely, union T, union U, and neither; that the ballot directs a voter to choose one of the three alternatives; that an alternative receives one vote from each voter who chooses it; and that neither (N) is the incumbent. In each case, one alternative (we arbitrarily make it be N) will win or continue under the NLRB's rules even though another alternative (we arbitrarily make it be T) is best according to Condorcet's principle.

Example 1 illustrates the weakness of rule 1, which invalidates an election if less than two ballots are submitted. Suppose that (a) two individuals are eligible to vote, (b) one of the individuals ranks the alternatives in the order TUN (that is, prefers T to U or N and prefers U to N) and therefore chooses T; and (c) the other individual is indifferent among T, U, and N and therefore does not submit a ballot. Then, according to

rule 1, the election is a nullity and the incumbent (N) continues, even though T would have received one vote out of one in a runoff against either N or U.

Example 2 illustrates the weakness of rule 2, which makes a simple majority decisive. Suppose that (a) 61 individuals submit valid ballots, (b) 30 of the individuals rank the alternatives in the order TUN and therefore choose T, (c) 29 of the individuals rank the alternatives in the order NTU and threfore choose N, and (d) the other two voters rank the alternatives in the order (TN)U (that is, are indifferent between T and N and prefer either T or N to U) and let chance decide whether they choose T or N. Then, one time out of four, N will receive 31 votes out of 61. When that happens, rule 2 will make N the winner, even though T would have received 30 votes out of 59 in a runoff against N and 61 votes out of 61 in a runoff against U.

Example 3 illustrates the weakness of rule 3, which breaks a tie in favor of nonrepresentation. Suppose that (a) 60 individuals submit valid ballots, (b) 24 of the individuals rank the alternatives in the order UTN and therefore choose U, (c) 24 other voters rank the alternatives in the order NTU and therefore choose N, and (d) the other 12 voters rank the alternatives in the order T(UN) and therefore choose T. Then board agents must eliminate T, which received merely 12 votes, and conduct a runoff between U and N, both of which received 24 votes. If the number of voters who rank the alternatives in each order does not change between the two elections, both U and N will receive 24 votes in the runoff. Then, according to rule 3, N wins, even though T would have received 36 votes out of 60 in a runoff against either N or U.

Example 4 illustrates the weakness of rule 4, which prescribes a runoff between the two leaders. Suppose that (a) 60 individuals submit valid ballots, (b) 24 of the individuals rank the alternatives in the order UTN and

therefore choose U, (c) another 24 of the individuals rank the alternatives in the order NTU and therefore choose N, and (d) the remaining 12 voters rank the alternatives in the order TNU and therefore choose T. Then board agents must, according to rule 4, eliminate T, which received merely 12 votes, and conduct a runoff between U and N, both of which received 24 votes. If the number of voters who rank the alternatives in each order does not change between the two elections, N will receive 36 votes in the runoff, while U will receive merely 24. Accordingly, N will win, even though T would have received 36 votes out of 60 in a runoff against either N or U.

Example 5 illustrates the weakness of rule 5, which (like rule 3) breaks a tie in favor of nonrepresentation. Suppose that (a) 60 individuals are eligible to vote and submit valid ballots, (b) 30 of the individuals rank the alternatives in the order TUN and therefore choose T, (c) 29 of the individuals rank the alternatives in the order UTN and therefore choose U, and the other voter ranks the alternatives in the order (TU)N and lets chance decide whether s/he chooses T or U. Then, one time out of two, both T and U will receive 30 votes out of 60. When that happens, rule 5 will make N the winner, even though T would have received 60 votes out of 60 in a runoff against N and 30 votes out of 59 in a runoff against U.

Example 6 illustrates the weakness of rule 6, which breaks a tie in favor of the incumbent. Suppose that (a) 60 individuals submit valid ballots, (b) 20 of the individuals rank the alternatives in the order TUN and therefore choose T, (c) another 20 of the individuals rank the alternatives in the order UTN and therefore choose U, and (d) the remaining 20 voters rank the alternatives in the order NTU and therefore choose N. Then, according to rule 6, the election is a nullity and the incumbent (N) continues, even though T would have received 40 votes out of 60 in a runoff against either N or U.

Example 7 illustrates the weakness of rule 7, which (like rule 6) breaks a tie in favor of the incumbent. Suppose that (a) 60 individuals submit valid ballots, (b) 30 of the individuals rank the alternatives in the order TUN and therefore choose T, (c) 15 other voters rank the alternatives in the order UTN and therefore choose U, and (d) the remaining 15 voters rank the alternatives in the order NTU and therefore choose N. Then, according to rule 7, the election is a nullity and the incumbent (N) continues, even though T would have received 45 votes out of 60 in a runoff against either N or U.

In this section we pointed out that the rules used by the NLRB to produce a tally may necessitate conducting a runoff election and showed how the rules used by the NLRB to determine the outcome may deny victory to a Condorcet alternative. In the next two sections, we will propose a way to determine the outcome that assures victory to a Condorcet alternative, if one exists, and then describe a ballot which, with either the improved or the current rules for determining the outcome, would make runoff elections superfluous. If, before continuing, you try to do the same, you will know whether our next two sections gave you any new ideas.

A Better Way to Determine the Outcome

We favor a three-part rule for determining the outcome of a representation election--or of any other election with no write-in votes and at most one winner. The first part of our rule, which uses a score suggested by A. H. Copeland,[28] assures victory to a Condorcet alternative, if one exists, and therefore will suffice to select a winner in more than 90 percent of elections with three alternatives. The second part of our rule, which uses a score suggested by R. D. Luce and H. Raiffa,[29] serves to break ties if two or more alternatives are equally best according to Copeland's criterion.

The third part of our rule, which combines two familiar ways to break a tie, serves to choose a winner if two or more alternatives are equally best according to both Copeland's criterion and Luce and Raiffa's criterion. We will present the three parts in order.

First Part

The first part of our rule refers to a runoff between each possible pair of alternatives on the ballot. We formulate this part as follows: if the difference between the number of runoffs that one of the alternatives would have won and the number of runoffs that that alternative would have lost is larger than the corresponding difference for any of the other alternatives, than that alternative wins the election. In turn, an alternative wins a runoff if it receives more than half of the votes cast in the runoff, and an alternative loses a runoff if it receives less than half of the votes cast in the runoff.

To clarify this part of our rule, and also to show why it must select a Condorcet alternative if one exists, we will reuse the orderings in example 4 of the previous section. Suppose that (a) the official ballot directs a voter to choose between T and U, between T and N, and between U and N; (b) the rule for weighting ballots assigns one vote to each valid ballot submitted; (c) 60 individuals submit a valid ballot; (d) the alternatives are ranked in the order UTN by individuals 1-24, in the order NTU by individuals 25-48, and in the order TNU by individuals 49-60; (e) given a choice between T and U, individuals 25-60 choose T and individuals 1-24 choose U, making T the winner and U the loser of this runoff; (f) given a choice between T and N, individuals 1-24 and 49-60 choose T and individuals 25-48 choose N, making T the winner and N the loser of this runoff; (g) given a choice between U and N,

individuals 1-24 choose U and individuals 25-60 choose N, making N the winner and U the loser of this runoff; and (h) an alternative wins the election if the number of runoffs won, less the number of runoffs lost, is larger for that alternative than for any other alternative on the ballot.

Then T is a Condorcet alternative, and it wins the election. T won two runoffs and lost none, making its score +2; N won one runoff and lost one, making its score 0; and U won none and lost two, making its score -2. Since T's score is largest, it wins. In contrast, N would win under the NLRB's rules, as we saw in the previous section.

While Copeland's criterion always selects a Condorcet alternative if one exists, the criterion is not merely a numerical version of Condorcet's principle. One of three or more alternatives can have a score larger than the score of either of the other alternatives (and therefore be best according to Copeland's criterion) despite tying in one runoff (and therefore not being best according to Condorcet's principle). Similarly, one of four or more alternatives can have a score larger than the score of any of the other alternatives despite losing in one runoff. Hence, Copeland's criterion may select a winner even if no alternative is best according to Condorcet's principle.

Here is an example in which one of three alternatives wins despite tying in a runoff. Suppose that (a) the official ballot directs a voter to choose between T and U, between T and N, and between U and N; (b) the rule for weighting ballots assigns one vote to each valid ballot submitted; (c) 60 individuals are eligible to vote; (d) the alternatives are ranked in the order TNU by individuals 1-30 and in the order UTN by individuals 31-60; (e) given a choice between T and U, individuals 1-30 choose T and individuals 31-60 choose U, making both alternatives neither a winner nor a loser of this

runoff; (f) given a choice between T and N, all 60 individuals choose T, making T the winner and N the loser of this runoff; (g) given a choice between U and N, individuals 1-30 choose N and individuals 31-60 choose U, making both alternatives neither a winner nor a loser of this runoff; and (h) an alternative wins the election if the number of runoffs won, less the number lost, is larger for that alternative than for any other.

Then, although no Condorcet alternative exists, T wins the election. T won one runoff and lost none; making its score +1; U won none and lost none, making its score 0; and N won none and lost one, making its score -1. Since T's score is largest, it wins. In contrast, according to the fifth of the seven rules used by the NLRB to determine the outcome, N should win.

While Copeland's criterion has a domain even larger than that of Condorcet's principle, cases may occur in which Copeland's criterion, too, is not decisive. If two or more alternatives have the largest difference between the number of runoffs won and the number lost, then Copeland's criterion, by itself, would yield two or more winners. To break a tie in such cases is the function of the second part of our rule.

Second Part

The second part of our rule refers to votes for and votes against an alternative in all runoffs where it is on the ballot. We word this part as follows: if the difference between the number of runoffs won and the number of runoffs lost is largest for two or more of the alternatives on the ballot and the difference between the number of favorable votes and the number of unfavorable votes is larger for one of those alternatives than for any of the others, then that alternative wins the election.

An example will clarify what we mean. Suppose that (a) the ballot directs a voter to choose between T and U, between T and N, and between U and N; (b) the rule for weighting ballots assigns one vote to each valid ballot submitted; (c) 61 individuals are eligible to vote; (c) the alternatives are ranked in the order TNU by individuals 1-30, in the order UTN by individuals 31-60, and in the order NUT by individual 61; (d) given a choice between T and U, individuals 1-30 choose T and individuals 31-61 choose U, making U the winner and T the loser of this runoff; (e) given a choice between T and N, individuals 1-60 choose T and individual 61 chooses N, making T the winner and N the loser of this runoff; (f) given a choice between U and N, individuals 31-60 choose U and individuals 1-30 and 61 choose N, making N the winner and U the loser of this runoff; and (g) an alternative wins the election if the number of runoffs won, less the number of runoffs lost, is as large for it as for any other alternative on the ballot and the number of votes for it in its runoffs, less the number of votes against it in its runoffs, is larger for it than for any other alternative with the same difference between the number of runoffs won and the number lost.

Here each of T, U, and N won one runoff and lost one. Hence, the number of runoffs won, less the number lost, is the same (namely, zero) for each of the alternatives. However, in runoffs involving T, voters cast 30 + 60 = 90 votes for T and 31 + 1 = 32 votes against T (a difference of 58); in runoffs involving U, voters cast 31 + 30 = 61 votes for U and 30 + 31 = 61 votes against U (a difference of zero); and, in runoffs involving N, voters cast 1 + 31 = 32 votes for N and 60 + 30 = 90 votes against N (a difference of -58). Hence the number of favorable votes, less the number of unfavorable votes, is larger for T than for any other alternative with the

same difference between number of runoffs won and number lost. Accordingly, T wins the election. In contrast, under the fourth and second of the seven rules used by the NLRB to determine the outcome, there would be a runoff between T and U, and U would win.

Unfortunately, the second part of our rule may not suffice to break a tie. It is possible that the score suggested by Luce and Raiffa as well as the score suggested by Copeland will be equally large for two or more alternatives. To resolve such cases is the function of the third part of our rule.

Third Part

The third part of our rule uses incumbency or, if necessary, chance to break a tie. We word this part as follows: if both the difference between the number of runoffs won and the number of runoffs lost and the difference between the number of favorable votes and the number of unfavorable votes is largest for two or more alternatives, then the incumbent wins the election when it is one of those alternatives and, when it is not, whichever one of those alternatives wins an official lottery wins the election.

An example will clarify what we mean. Suppose that (a) the official ballot directs a voter to choose between T and U, between T and N, and between U and N; (b) the rule for weighting ballots assign one vote to each valid ballot submitted; (c) 60 individuals are eligible to vote; (d) the alternatives are ranked in the order TUN by individuals 1-30, UTN by individuals 31-50, and NUT by individuals 51-60; (e) given a choice between T and U, individuals 1-30 choose T and individuals 31-60 choose U, making both alternatives neither the winner nor the loser of this runoff; (f) given a choice between T and N, individuals 1-50 choose T and individuals 51-60 choose

N, making T the winner and N the loser of this runoff; (g) given a choice between U and N, individuals 1-50 choose U and individuals 51-60 choose N, making U the winner and N the loser of this runoff; (h) N is the only incumbent; (i) T wins an official lottery against U; and (j) the lottery is decisive if the difference between the number of runoffs won and the number lost is largest for two or more alternatives, the difference between the number of favorable votes and the number of unfavorable votes is the same for two or more of those alternatives, and none of the latter alternatives is an incumbent.

Then T wins the election. Both T and U won one runoff and lost none, while N won none and lost two. Hence, the number of runoffs won, less the number lost, is largest (and equals +1) for both T and U. Furthermore, the number of favorable votes, less the number of unfavorable votes, is the same (namely, 30 + 50 − 30 −10 = 40) for both T and U. However, U is not an incumbent, and T won an official lottery against U. Accordingly, T wins the election. In contrast, under the fourth and third of the rules used by the NLRB to determine the outcome, there would be a runoff between T and U and, when they tie, N would win.

The third part of our rule resorts to a lottery only if none of the alternatives that are best according to both Copeland's criterion and Luce and Raiffa's criterion is an incumbent. Otherwise, the incumbent wins. As a result, our rule violates the principle of neutrality among alternatives.

We give an incumbent the edge in such cases in order to avoid transition costs. There are burdens associated with introducing or replacing a representative, and we prefer to avoid those burdens unless voters issue a mandate to change the current situation. If an incumbent has tied for first

place according to both Copeland's criterion and Luce and Raiffa's criterion, no such mandate has emerged.

One question remains: how should the ballot be designed when there are three or more alternatives?

Design of the Ballot

The best way to offer voters a choice among three or more alternatives depends on how the outcome of the election will be determined. Accordingly, we will suggest one type of ballot for use with our rule for determining the outcome and another type of ballot for use with the NLRB's rules.

With Our Rule

An agency using our rule to determine the outcome of an election should use a multiple-runoff ballot, that is, a ballot that directs a voter to choose between each pair of alternatives. With three alternatives, a voter would be asked for three choices; with four alternatives, for six; with five alternatives, for ten.

The layout is simple. The left side of the ballot can list the alternatives, giving each alternative a separate line. With three alternatives, the right side of the ballot would have three columns of squares, each column containing a square on two of the three lines. The first column of squares, which might be titled "Runoff 1," would have a square on line 1 and on line 2; the second column, perhaps titled "Runoff 2," would have a square on line 1 and on line 3; and the third column, perhaps titled "Runoff 3," would have a square on line 2 and on line 3.

The directions also are simple. They might say the following: "This ballot allows you to vote in three runoffs. Runoff 1 has a square for union T and a square for union U. Mark an X in the square for whichever one of these

two you prefer. Then, refer to Runoff 2. It has a square for union T and a square for neither union. Mark an X in the square for whichever one of these two you prefer. Then refer to Runoff 3. It has a square for union U and a square for neither union. Mark an X in the square for whichever one of these two you prefer. If, in any of the three runoffs, you do not favor one of the two alternatives more than the other, you may either leave both squares blank or mark an X in both squares."

With a multiple-runoff ballot, tellers could readily implement our rule for determining the winner. Each ballot would show a choice between each pair of alternatives (and, if ballots cast multiple votes, the number of votes assigned to the ballot). Tellers then could easily determine how many runoffs each alternative won and lost. In addition, if the number of runoffs won, less the number lost, turned out to be largest for more than one alternative, tellers could readily determine how many favorable and unfavorable votes each of those alternatives received in all of its runoffs.

Here is an example involving three alternatives and (for generality) multiple votes per ballot. Suppose that (a) tellers receive 36 valid ballots; (b) in the runoff between T and U, ballots 1-21 are blank, ballots 22-31 choose T, and ballots 32-36 choose U; (c) in the runoff between T and N, ballots 1-31 choose T and ballots 32-36 choose N; (d) in the runoff between U and N, ballots 1-21 and 32-36 choose U and ballots 22-31 are blank; and (e) the rule for weighting ballots assigns 200 votes to each of ballots 1-21, 1,000 votes to each of ballots 22-31, and 2,000 votes to each of ballots 32-36 (each vote representing, perhaps, one hour worked in the bargaining unit during pay periods that ended during the 12 months prior to the election).

Tellers' first task is to determine, for each alternative, the number of runoffs won, less the number lost. In the runoff between T and U, T received

10 x 1,000 = 10,000 votes and U received 5 x 2,000 = 10,000 votes, making both alternatives neither a winner nor a loser of the runoff. In the runoff between T and N, T received (21 x 200) + (10 x 1,000) = 14,200 votes and N received 5 x 2,000 = 10,000 votes, making T the winner and N the loser of this runoff. In the runoff between U and N, U received (21 x 200) + (5 x 2,000) = 14,200 votes and N received none, making U the winner and N the loser of this runoff. The number of runoffs won, less the number lost, accordingly, is 1-0 = 1 for T, 1-0 = 1 for U, and 0-2 = -2 for N.

Since the number of runoffs won, less the number lost, is largest for both T and U, tellers now count the number of favorable votes, less the number of unfavorable votes, for T and U. In runoffs involving T, voters cast 10,000 + 14,200 = 24,200 votes for T and 10,000 + 10,000 = 20,000 votes against T, a difference of 4,200. In runoffs involving U, voters cast 10,000 + 14,200 = 24,200 votes for U and 10,000 + 0 = 10,000 votes against U, a difference of 14,200. Since the difference is larger for U than for T, U would win the election.

With one vote per ballot, the tallying would, of course, be even easier. T would receive 10 votes out of 15 in its runoff against U and 31 votes out of 36 in its runoff against N and therefore would win the election. Incidentally, the alternatives are ranked in the order (TU)N by 21 voters, T(UN) by 10 voters, and UNT by five voters; under the NLRB's rules, as a result, any of the three alternatives might win the election.

Let us turn now to the type of ballot that is best with the NLRB's rules for determining the outcome of an election.

With the NLRB's rules

With the NLRB's rules for determining the outcome, that is, majority-or-runoff rules, it is not possible to assure victory to a Condorcet alternative when one exists, but it is possible to adopt a ballot that makes runoff elections superfluous.

The multiple-runoff ballot described above reveals not only how an individual would have voted in each possible runoff but also the individual's first choice. Given three alternatives, for example, a voter can mark the ballot in 26 different ways, of which seven would reveal that the voter's first choice is the first alternative, seven would reveal that the voter's first choice is the second alternative, seven would reveal that the voter's first choice is the the third alternative, one would reveal that the voters first choice is both of the first two alternatives, one would reveal that the voter's first choice is both the first and third alternatives, one would reveal that the voter's first choice is both the second and third alternatives, and two would reveal that the voter has no first choice.[30] Hence, an agency could adopt the multiple-runoff ballot described above but continue to use majority-or-runoff rules to determine the outcome.

To use a multiple-runoff ballot in conjunction with majority-or-runoff rules, however, would add a troublesome first step to the process of tallying ballots. Before tellers could determine the number of first-choice votes received by each alternative, they would need to identify each voter's first choice(s).[31] To facilitate tallying, accordingly, an agency that wants or needs to use majority-or-runoff rules might add a column for first choices to the ballot described above.

The left side of the ballot still would list the alternatives. Now, however, the ballot would--given three alternatives--have four additional

columns and a total of nine squares. The first of these columns would contain a square on the line of each alternative and might be titled, "Your first choice." The remaining columns might again be titled, "Runoff 1," "Runoff 2," and "Runoff 3."

The directions now might say the following: "This ballot allows you both to vote for a first choice and to vote in three runoffs. Mark an X in the first square to the right of the result that you favor most. If two results are equally your first choice, choose one and mark an X only in the first square to its right. Then refer to Runoff 1. It has a square for union T and a square for union U. Mark an X in the square for whichever one of the two you prefer. Then refer to Runoff 2. It has a square for union T and a square for neither union. Mark an X in the square for whichever one of these two you prefer. Then refer to Runoff 3. It has a square for union U and a square for neither union. Mark an X in the square for whichever one of these two you prefer. If, in any of the three runoffs, you do not favor one of the two alternatives more than the other, you may either leave both squares blank or mark an X in both squares."

There are several reasons why the ballot just described asks for "your first choice" instead of "your first choice or choices." First, allowing a voter to identify more than one first choice might increase the frequency of "insincere" or "strategic" voting. Voters who are not indifferent between two alternatives might identify both of them as first choice in the hope of defeating a third alternative. Second, allowing a voter to identify more than one first choice might cause a Condorcet alternative to lose more often than it prevents a non-Condorcet alternative from winning. We can compose examples of both results.[32] Third, allowing a voter to identify more than one first

choice would entail modifying the rules for determining the outcome. Since, in this subsection, we are suggesting how to make runoff elections superfluous even with the majority-or-runoff rules, it would be incongruous for us to try to identify a less unsatisfactory version of those rules.

Someone who sees ballots with a column for first choices and at least three columns for runoffs may be inclined to replace the runoff columns with a column for second choices and ask tellers to infer runoff votes from first and second choices. Doing so would be a mistake. If a voter's pairwise rankings are incomplete or intransitive, the voter's first and second choices will give tellers misleading information about how the individual would have voted in at least one runoff.

Here is an example in which, even though voters have unique first choices and vote sincerely, their first and second choices would give misleading information. Suppose that (a) the official ballot directs voters to identify one (or at least one) of T, U, and N as first choice and either none or one of the remaining alternatives as second choice; (b) 60 individuals submit a valid ballot; (c) individuals 1-10 prefer N to U, have no opinion about T, and therefore identify N as first choice and nothing as second choice; (d) individuals 11-20 are able to detect or evaluate a difference only between U and N, prefer N to U, are indifferent both between T and U and between T and N, and therefore also identify N as first choice and nothing as second choice;[33] (e) individuals 21-30 have somewhat inconsistent opinions, preferring N to U and U to T but being indifferent between T and N, and identify N as first choice and U as second choice; (f) individuals 31-38 prefer U to either T or N, are indifferent between T and N, and therefore identify U as first choice and nothing as second choice; (g) individuals 39-60

prefer T to U or N, prefer U to N, and therefore identify T as first choice and U as second choice; (h) the rule for weighting ballots assigns one vote to each valid ballot; and (i) if no alternative receives more than half of the first-choice votes, then the winner is whichever of the two leaders would have received more votes in a runoff between the two.

In this case, the leaders are N (which received 30 first-choice votes out of 60) and T (which received 22), and tellers now must decide which alternative would have won a runoff between N and T. From the ballots, tellers would erroneously infer that individuals 1-10 (whose rankings are incomplete but who correctly identified N as first choice and nothing as second choice) and individuals 11-20 (whose indifferences are intransitive but who also correctly identified N as first choice and nothing as second choice) rank the alternatives in the order N(TU) and therefore would have chosen N instead of T in the runoff, and that individuals 21-30 (whose strict preferences are intransitive but who correctly identified N as first choice and U as second choice) rank the alternatives in the order NUT and therefore also would have chosen N instead of T in the runoff. In addition, tellers would correctly infer that individuals 31-38 (who correctly identified U as first choice and nothing as second choice) rank the alternatives in the order U(TN) and therefore would have abstained in the runoff, and that individuals 39-60 (who correctly identified T as first choice and U as second choice) rank the alternatives in the order TUN and therefore would have chosen T instead of N in the runoff. Accordingly, tellers erroneously conclude that N would have received 30 votes out of 52 in the runoff and therefore should win.

In fact, T is a Condorcet alternative and would have won the runoff against N. Individuals 1-30 would have abstained in the runoff, leaving T

with 22 votes out of 22. If the ballot had requested paired comparisons, instead of second choices, the correct tally and outcome would have emerged.

We conclude that an agency using majority-or-runoff rules should adopt a multiple-runoff ballot and add a column for first choices. Using the added column to determine a winner or to select alternatives for a runoff may deny victory to a Condorcet alternative, but this incongruity should be blamed on the majority-or-runoff rules, not on the design of the ballot. Alone, a new ballot can merely make runoff elections superfluous.

Summary

The NLRB has a well-defined procedure for determining which union, if any, will represent a specified bargaining unit. Eligible employees vote either once or twice, an official ballot asks a voter to choose one alternative each time, each valid ballot casts one vote, and an alternative wins if it appears on the initial ballot and either (a) it receives more than half of the votes cast in the initial election or (b) it and one other alternative receive more votes in the initial election than any third alternative receives, but less than a majority, and then it receives a majority of the votes cast in a runoff election involving only those two alternatives. If three alternatives tie for first place or two alternatives tie for second, the election is nullified; but if two alternatives tie for first place and either the ballot offered voters no third alternative or the entire electorate voted for the two leaders, then nonrepresentation wins.

When three or more alternatives are eligible to win an election, the NLRB's procedure has a substantive inefficiency. It may deny victory to an alternative that would have won a runoff against each of the other

alternatives. This incongruous result can occur because the initial election may eliminate that alternative, because some voters may have more than one first choice, and because elections are nullified when three alternatives tie for first place or two alternatives tie for second place.

To correct this problem, we suggest that the NLRB adopt a different rule for determining the winner. In particular, we think that an alternative should win an election if (a) it alone has the largest difference between number of runoffs won and number of runoffs lost, or (b) it is one of two or more alternatives having the largest difference between runoffs won and runoffs lost, and it alone has the largest difference between number of favorable votes and number of unfavorable votes, or (c) it is one of two or more alternatives having the largest difference both between runoffs won and runoffs lost and between favorable votes and unfavorable votes, and it alone is an incumbent or has won an official lottery. This rule yields a winner in all cases.

The best way to offer voters a choice among three or more alternatives depends on how the outcome of the election is to be determined. With our rule, the ballot should have squares in which a voter can choose between each pair of alternatives. With the current rule, the ballot should, in addition, have squares in which a voter can identify a first choice. With runoff squares on the ballot, runoff elections would be superfluous.

Footnotes

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[1] 129 U.S.C. §§ 158(a)(5), 159(a), 159(c)(3).

[2] 45 NLRB Ann. Rep. 270 (1980).

[3] For representation elections certified during the year ended 9/30/80, for example, the arithmetic average of the number of valid ballots was 55.9, the arithmetic average of the number of individuals eligible to vote was 63.6, and the ratio of the former to the latter was .878. 45 NLRB Ann. Rep. 276 (1980).

[4] NLRB, Casehandling Manual (Part-Two) Representation Proceedings §11090.1(c) (1978).

[5] Ibid. §§ 11022, 11306.

[6] Ibid. § 11090.1.

[7] Ibid. § 11340.8.

[8] Ibid. § 11340.4.

[9] Ibid. §§ 11322.1, 11334, 11336.4.

[10] Woodmark Industries, 80 N.L.R.B. 1105 (1948). In contrast, the National Mediation Board, which conducts representation elections under the Railway Labor Act of 1926, invites write-in votes for either a union or an individual. On the other hand, even though the NMB omits nonrepresentation from the official ballot, it invalidates a ballot on which a voter has written in a preference for nonrepresentation. See H. W. Risher, Selection of the Bargaining Representative under the Railway Labor Act, 17 Vill. L. Rev. 246 (1971).

[11] The consequences of misconduct depend on the circumstances. Misconduct by board agents may produce a rerun. Misconduct by a union will not prevent a "certification of results of election" but may produce a rerun if the union won. Misconduct by the employer will not prevent a "certification of

representative" but may produce a rerun or even a "certification of representative" if nonrepresentation won. In NLRB v. Gissel Packing Co., 395 U.S. 575 (1969), the Supreme Court affirmed that the NLRB may certify a union even though nonrepresentation won the election. State labor-relations boards have followed suit.

[12]Gemco Automotive Center No. 507, 198 N.L.R.B. 950 (1972). Until S. A. Kendall, Jr., 41 N.L.R.B. 395 (1942), an election could be certified if merely one ballot was submitted.

[13]A union wins a representation election conducted by the National Medition Board only if more than half of the electorate votes and therefore only if more than one-fourth of the electorate votes for the union. Virginia Railway Co., v. System Federation No. 40, 300 U.S. 515 (1937).

[14]For example, in Valencia Service Co., 99 N.L.R.B. 343 (1952), the NLRB certified a union that received three votes out of five cast, even though 16 individuals were eligible to vote.

[15]NLRB, Casehandling Manual (Part-Two) Representation Proceedings § 11340.8 (1978).

[16]The different rule applicable to deauthorizing a union shop is attributable to different statutory language. Section 8(a)(3) of the NLRA, which governs deauthorization elections, refers to "a majority of the employees eligible to vote." Sections 9(a) and 9(c)(3), which govern representation elections, omit the last three of these words.

[17]NLRB, Casehandling Manual (Part-Two) Representation Proceedings § 11350.1 (1978).

[18]Ibid. §§ 11350.1, 11350.3.

[19]Ibid. § 11350.1. With cause, Congress decided to specify which alternatives may win a runoff election. Section 9(c)(3) of the NLRA, which

the Taft-Hartley Act added, states, "In any election where none of the choices on the ballot receives a majority, a run-off shall be conducted, the ballot providing for a selection between the two choices receiving the largest number of valid votes cast in the election." Until Interlake Iron Corp., 4 N.L.R.B. 55 (1937), the NLRB did not include "neither" or "none" on the initial ballot. Then, until 1947, the NLRB did not include nonrepresentation on the runoff ballot unless it came in first in the initial election. Meanwhile, in Alaska Salmon Industries, Inc., 64 N.L.R.B. 339 (1945), the NLRB gave three unions a place on the runoff ballot.

[20]NLRB, Casehandling Manual (Part-Two) Representation Proceedings § 11350.1 (1978).

[21]Ibid. §§ 11350.1, 11452.

[22]Ibid. §§ 11350.1, 11452.

[23]For the year ended 9/30/80, for example, 424 (that is, 5.2 percent) of 8,198 elections certified by agents of the NLRB involved two unions, and 29 (that is, .4 percent) involved three or more. 45 NLRB Ann. Rep. 269 (1980).

[24]For the year ended 9/30/80, for example, 34 (that is, 7.5 percent) of 453 certified elections involving two or more unions were runoff elections. 45 NLRB Ann. Rep. 264, 269 (1980).

[25]Marquis de Condorcet, Essai sur l'application de l'analyse à la probabilité des decisions rendes à la pluralité des voix (1785), viewed it as an axiom of democracy that an alternative is best if it would have won a runoff against each of the other alternatives. Later, K.O. May, A Set of Independent Necessary and Sufficient Conditions for Simple Majority Decision, 20 Econometrica 680 (1952), derived Condorcet's principle from several more fundamental axioms.

[26]D. T. Jamison, The Probability of Intransitive Majority Rule, 24 Public Choice 87 at 90 (1975). These proportions assume that about 15 individuals vote. R. G. Niemi and H. F. Weisberg, A Mathematical Solution for the Probability of the Paradox of Voting, 13 Behavioral Science 317 at 322 (1968), obtained smaller proportions. According to their calculations, the probability that none of three/four/five alternatives is best according to Condorcet's principle decreases from .9250/.85/.78 with seven voters to .9123/.8245/.7487 with thousands of voters. However, Niemi and Weisberg assumed that, regardless of other voters' orderings, the probability that any one voter has any one ordering of n alternatives equals 1/n! for each of the n! strong orderings. In contrast, Jamison obtained voters' orderings by interview, thereby incorporating the tendency of voters with a common culture to have similar preferences, or at least to derive their orderings from a common array (for example, an array in which alternatives are arranged from most reactionary to most radical). Unfortunately, both studies artificially prevented any voter from being indifferent between two or more alternatives (or from having incomplete or intransitive preferences).

[27]P. Fishburn and W. Gehrlein, An Analysis of Simple Two-Stage Voting Systems, 21 Behavioral Science 1 at 7 (1976); W. Ludwin, Voting Methods: A Simulation, 25 Public Choice 19 at 27 (1976). Unfortunately, both of these studies assumed that the probability that any one voter has any one ordering of n alternatives equals 1/n! for each of the n! strong orderings and equals zero for orderings involving indifference, incompleteness, or intransitivity.

[28]A. H. Copeland, A Reasonable Social Welfare Function, mimeographed notes, University of Michigan Seminar on Applications of Mathematics to the Social Sciences (1951).

[29]R. D. Luce and H. Raiffa, Games and Decisions 358 (1958).

[30]Suppose that the three alternatives are T, U, and N. Then a ballot showing any of seven sets of pairwise rankings, namely, {TU, UN, TN}, {TN, NU, TU}, {TU, TN}, {TU, UN}, {TN, NU}, {TU}, or {TN}, would reveal that the voter's first choice is T, that is, that the voter prefers T to at least one of U and N and does not prefer at least one of U and N to T. Similarly, a ballot showing any of seven sets of pairwise rankings, namely, {UT, TN, UN}, {UN, NT, UT}, {UT, UN}, {UT, TN}, {UN, NT}, {UT}, or {UN}, would reveal that the voter's first choice is U. Likewise, a ballot showing {NU, UT, NT}, {NT, TU, NU}, {NU, NT}, {NU, UT}, {NT, TU}, {NU}, or {NT} would reveal that the voter's first choice is N. In addition, a ballot showing {TN, UN} would reveal that the voter's first choice is both T and N; a ballot showing {TU, NU} would reveal that the voter's first choice is both T and N; a ballot showing {UT, NT} would reveal that the voter's first choice is both U and N; and a ballot showing {TU, UN, NT} or {TN, NU, UT} would reveal that the voter has no first choice. In turn, a ballot would show, say, {TU, TN} if the voter chose T in the runoff between T and U, chose T in the runoff between T and N, and made no choice or both choices in the runoff between U and N.

[31]The previous footnote indicates how to do so.

[32]Here is an example of each type. Suppose that the alternatives are ranked in the order NTU by 29 voters, TUN by 28 voters, (TN)U by two voters, and (TU)N by two voters, making T a Condorcet alternative. Then, with sincere voting and each voter allowed to identify only one first choice, N may receive 31 votes out of 61 in the initial election and win. With sincere identification of dual first choices, in contrast, T would receive 32 votes out of 65 and go on to win a runoff against N. On the other hand, suppose that the alternatives are ranked in the order TNU by two voters and NUT by one

voter, again making T a Condorcet alternative. Then, with sincere voting and each voter allowed to show only one first choice, T would receive two votes out of three and win. However, if a voter may identify more than one first choice and the first two voters identify both T and N as first choice, N would receive three votes out of five and win.

[33]Like individuals 11-20, we have some indifferences that are not transitive. Because we cannot distinguish eggs that have been salted moderately from eggs that have been salted either lightly or heavily, we are indifferent between them. Nevertheless, we prefer lightly-salted eggs to heavily-salted eggs.