



## Report of the Committee on Election Procedures for Fellows

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THE ECONOMETRIC SOCIETY

REPORT OF THE COMMITTEE ON  
ELECTION PROCEDURES FOR FELLOWS

1. *Introduction*

IN SEPTEMBER OF 1984, the Executive Committee unanimously adopted the report of a special committee consisting of F. Hahn, Chairman, R. Aumann, and A. Sen, which recommended certain changes in the election procedures for Fellows of the Society. The same committee was requested to report back after reviewing the results of the first two elections under the new system. For the review, President M. Bruno joined the committee.

The report first describes the system (Sections 3 and 4), its historical background (Sections 2 and 5), and the results of the first two elections (Sections 6, 7, 8 and 9), then sets forth recommendations. The notes at the end include detailed empiric and numerical background material.

2. *Background*

Until 1984, the election procedure for Fellows had two distinct parts. In one, the number  $m$  to be elected was determined (it was the median of the numbers  $m(i)$  indicated by each voter  $i$ ); names did not enter at this stage. In the second part, the voters indicated in some way their preferences between the candidates. (Until 1979, each voter rank ordered the candidates; this was replaced in 1979 by an approval system, in which voters vote either "yes" or "blank" for each candidate.) The voters' preferences were then amalgamated into a rank order, and the candidates elected were those  $m$  who ranked highest in this amalgamated order.

Though the 1979 change from rank order to yes-blank was an improvement, the system still suffered from drawbacks. *First*, it continued to stress numbers rather than individuals. *Second*, a conscientious voter could not simply decide whether or not he wished a certain candidate elected, and vote accordingly. He had to estimate how his selection of  $m(i)$  might affect each of the candidates' chances, and also whether a positive vote for one candidate might "crowd out" another one, who perhaps was more important to the voter. *Third*, the system took no account of regional, linguistic, or specialist "minority" interests.

3. *The Current System*

In 1984, a one-part, direct system was introduced. Each voter may vote once for as many candidates as he wishes, and is allowed to vote twice for at most one candidate. A candidate is elected if and only if the total number of votes he receives is at least one third of the number of voters.

4. *Motivation*

The new system addresses all three drawbacks discussed above (Section 2). In effect, it provides for as many separate elections as there are candidates. A positive vote for one candidate does not affect the chances of any other candidate. The only remaining competition is for the double vote, which can be cast for only one candidate.

The primary purpose of the double vote is to enhance the chances of "minority" candidates whose work is, for one reason or another, not as well known as it should be; this appears explicitly in the instructions to the voter. The double vote also has an important quantitative effect; see below (Section 5).

5. *Design of the System*

A major concern of the special committee was to design the system so that it would not, in itself, cause great upheavals; so that the number elected would, more or less,

correspond to the wishes of the electorate. For this purpose it carefully analyzed the data from previous elections. A preliminary report was withdrawn solely because of its unpredictability (see Note 2). The committee's final report ended by saying that "by its nature, this method is more sensitive to the crop of candidates in any particular year, so that one may expect wider swings than under the previous method . . . We should therefore neither expect nor desire too exact a correspondence with the number of Fellows previously elected; it is only if the difference gets out of hand that we need become concerned."

The most important parameter of the new system is the "cut-off," i.e., the number of votes required to elect a candidate. Analysis of previous elections indicated that to avoid large, arbitrary swings from year to year in the number of Fellows elected, the cut-off must be a constant proportion of the number of voters; and that to correspond to the wishes of the electorate, it should be roughly between 29 per cent and 33 per cent (when there is no double vote). This range is larger than it looks; it could amount to as much as 50 per cent of the number of fellows elected. It was also felt vital for the cut-off proportion to have a permanent, constitutional air about it; something like 31 per cent would have been unacceptable, and even 30 per cent was considered undesirable. All of this pointed to a cut-off of one-third; but without the double vote, this was dangerously high, it could lead to many fewer Fellows being elected than before.

Of course, the double vote tends to increase the total number of yes votes, and therefore the number elected. In its 1984 final report, the committee estimated that when used together with a one-third cut-off, the double vote would result in about the same number of yes votes as would result from a 30 per cent cut-off without the double vote. In general, voters were expected to cast their double votes for candidates whose chances they considered good but still uncertain; this, too, might increase the number elected. Thus, the double vote was designed to have an important *quantitative* effect, as well as the qualitative effect of enhancing the chances of "minority" candidates.

## 6. Results—Summary

Both qualitatively and quantitatively, the new system did gratifyingly well. Qualitatively, there is evidence that some of the more glaring distortions that had previously been present were eliminated. Quantitatively, the expectations of the committee were, on the whole, realized; the results continue previous trends, and appear to correspond roughly to the wishes of the electorate. A sample of two is admittedly not very reliable, but for the time being, it appears that the detailed empirical and theoretical analyses that went into the design of the new system have paid off.

## 7. Quantitative Results

10 Fellows were elected in 1984, and 13 in 1985. This continued previous trends; combining these figures with those from the five years during which the previous system was operating, we find that the numbers elected in each of the years 1979 through 1985 were 12, 18, 17, 12, 12, 10, 13. Thus 1984 continued the downward trend of the previous four years; the number has been at around 12 for the past four years, and has risen somewhat during the last year. Up to now, the new system has brought about no dramatic changes in the number elected.

The available evidence indicates that the number elected in 1984 and 1985 corresponds roughly to the wishes of the electorate during those years. See Note 3. In 1985, the correspondence was fairly close; if anything, the number elected was slightly high, but probably by at most 1. In 1984, it was probably slightly low, by perhaps 1 or at most 2.

The rise in the number elected over the two years under review is no doubt partly due to differences in the crop of candidates. Another reason may be systematic: As the new system settles in and voters become more familiar with it, they may begin to realize that single "yes" votes are essentially free, which has a tendency to increase their number.

The quantitative effects of the double vote as such are reviewed separately below (Section 9).

### 8. Qualitative Results

It is, of course, difficult to give a clear, objective measure of the success of the method in achieving its qualitative aims. There are, however, several indications that removal of the competition effect has had the intended result, i.e., the election of eminent candidates whose personal and professional ties with other Fellows are perhaps not very close (whether because they are not mainstream economists, or for whatever other reason). One such indication is discussed in Note 4. There also are stronger indications, which we will not discuss, because of the possibility of identifying the individuals involved.

Perhaps the most significant factor in the rise from 10 elected in 1984 to 13 in 1985 was the concentration of the vote. The mean number of candidates for whom each voter voted was about the same (13) in both years, but the vote was less diffuse in 1985—it was concentrated more on the upper end of the roster. This illustrates a basic qualitative difference from the previous method; previously, getting elected in a given year depended much more on one's standing among that year's candidates than it does now. It also indicates, again, that one should expect wider swings under the current method than previously.

It should be emphasized that the above two qualitative effects are unrelated to the double vote.

### 9. Effects of the Double Vote

The double vote was quantitatively very significant in both elections. Without it, 7 (rather than 10) would have been elected in 1984, and 10 (rather than 13) in 1985. See Note 5.

The distribution of double votes among the candidates was markedly different from the distribution of favorable votes (i.e., counting each vote once, whether it is double or single). In 1984, the ratio of double to favorable votes was .05 for the top five candidates, *increased* gradually until reaching .11 at the fifth bunch of five, and then fell rapidly. Even the *absolute* number of double votes was highest in the fifth bunch of five. This indicates that many of the voters did indeed cast their double votes for the more doubtful candidates, while shying away from those with little hope. In 1985, too, the number of double votes was relatively highest in the fifth bunch of five, though the effect was less marked. See Note 6.

On the qualitative level, counting a double vote twice rather than once significantly affected the rank order among the candidates. See Note 7.

Whether the double vote indeed succeeded in enhancing "minority" interests is more difficult to estimate. For that we would have to know the identity of the candidates, and this was not made available to the committee.

As the voters become more used to the new system, it is likely that they will learn to concentrate their double votes on fewer candidates. This would probably raise the number elected. The process can be hastened by including something to this effect in the instructions to the voters, and it is recommended that this be done (Section 10, recommendation (b)).

### 10. Recommendations

(a) The current procedure should remain unchanged for the time being. (This was approved.)

(b) The following should be added to the election materials that are mailed to the voters: "Fellows who wish to enhance the chances of candidates from some specific geographic, specialty, linguistic, or other area are encouraged to communicate with each

other, with a view to concentrating their double votes on fewer candidates." (Not acted on by the Executive Committee.)

(c) The President should appoint a committee representing the different viewpoints on this issue, that will report back to the Executive in the Summer of 1989. (Approved, with 1988 instead of 1989.)

#### NOTES

1. This report was prepared for and submitted to the Executive Committee in time for its meeting in September, 1986, before the 1986 elections took place. It has undergone editing for publication in *Econometrica*, but the substance of the report has not been changed; in particular, the results of the 1986 elections have not been taken into account.

2. A report submitted in July of 1984 recommended a system in which each voter is allowed an unlimited number both of double and of single votes, and the cut-off is 2/3. This report was withdrawn because of the unpredictability of the proposed procedure. In discussions with members of the Society, the committee came to the realization that there were at least three modes of voting under that procedure: (i) Voting 2 for candidates whom you wish elected, 0 for others; (ii) Voting 1 for those whom you wish elected, 2 for a small number of truly outstanding candidates, 0 for others; (iii) Voting 2 for candidates whom you wish elected, 0 for those who you definitely feel unworthy, 1 for all others. There seemed to be no way of guessing how many Fellows would vote in each mode, and whether there were not perhaps additional modes. The result was a very high variance in the prediction as to the number elected, not to speak of the undesirability of having Fellows vote in such widely diverse modes.

3. This note contains evidence for our assertion (Section 7) that the number elected in the last two years corresponds roughly to the number that the electorate would have wanted.

The current system is designed to steer voters towards being more concerned with individual merit—with *who* is elected—than with the number elected. Nevertheless, for keeping tabs on the system, it may be useful to engage in the thought experiment of estimating what might have been the median  $w$  of the numbers  $w(i)$  that each voter  $i$  wants elected.

Under the previous system, each voter  $i$  specified a number  $m(i)$  whose median  $m$  was the number elected. We indicated above (Section 2) why it is likely that  $m(i) \geq w(i)$ , and hence  $m \geq w$ . A conservative estimate of the difference is 1 (a greater difference would imply that correspondingly *more* candidates were elected than the voters wanted).

The number of favorable votes cast by  $i$  may differ from  $w(i)$  for several reasons, which differ between the current and the previous systems. Under both, a voter might wish a certain number elected from among those about whom he has no information. Under the previous system, moreover, the number  $x(i)$  of favorable votes cast by  $i$  may be less than  $w(i)$  because of the competition effect (Section 2). This does not apply to the number  $y(i)$  of favorable votes cast by  $i$  under the new system, so presumably,  $y(i) \geq x(i)$ . Conceivably, there might also be reasons for a voter to cast a larger number of favorable votes than the number he wants elected, but we judge these numerically insignificant.

Let  $y$  and  $x$  denote the averages of the  $y(i)$  and  $x(i)$  respectively. From  $y(i) \geq x(i)$  we obtain  $y \geq x$ . From Table I we find that during the five years in which the previous system was in operation,  $m$  exceeded  $x$  by approximately 10 per cent.

In both 1984 and 1985,  $y$  was 13. If we take  $x = 12$ , using  $m/x = 1.1$  yields  $m = 13.2$ , and then 12 is a reasonable estimate for  $w$ .

We do have an additional statistic that may be used to differentiate between the two years, namely the median of the  $y(i)$ . This was 11 in 1984 and 12 in 1985, which might indicate adjusting the estimate for  $w$  so that it is somewhat lower in 1984 than in 1985.

4. The number of double votes cast for a candidate is an index of his attractiveness in a competitive context. For an outstanding mainstream economist, one would expect there to be at least one fellow who feels sufficiently strongly about his candidacy to cast his

TABLE I

Year	<i>m</i>	<i>x</i>	<i>m/x</i>
1979	12	11.4	1.1
1980	18	16.6	1.1
1981	17	14.2	1.2
1982	12	11.2	1.1
1983	12	10.8	1.1

double vote for him. A candidate getting no double votes at all might have had trouble under the old system, where *all* the voting was competitive.

Indeed, in 1985, each of the top 35 candidates got at least one double vote. In 1984, each of the top 33 candidates got at least *two* double votes, with two exceptions, each of whom got none. One of the two was ranked 22, the other one 6.

While one cannot be sure, it may be conjectured that the candidate ranked 6 who received no double votes is an eminent scientist who has few personal or direct professional ties with fellows of the Society, is not in the mainstream. Recognizing his eminence, and taking account of the fact that a single positive vote "costs" nothing, the voters were glad to vote for him; but no one gave him his double vote, because each voter had someone who was more important to him. Because of the competitive nature of the previous system, it is quite possible that this candidate might have been "crowded out" under it. It is precisely this kind of result that the new method was designed to produce; note that it has nothing to do with the double vote, indeed goes in the opposite direction from the double vote.

5. In stating the numbers that would have been elected without the double vote, we took each of the two years in isolation, i.e., assuming that the elections in previous years had been conducted as they were actually conducted. To assess the long term effects that may be expected from any change in the current system, one should, of course, try to take account of cross-effects and of the effects of long-term trends on the nomination and election process. One such effect is that electing more candidates in one year may be expected to lead to additional nominations and elections in succeeding years, because of a perception of a different standard. Another effect is that a Fellow might refrain from nominating a candidate from a particular "minority" before another candidate from the same "minority" is elected, for fear of dispersing the double votes cast for either one. In the opposite direction, some of the three candidates who were elected in 1984 because of the double vote might, without the double vote, have appeared again on the ballot in 1985, and might have been elected then even without the double vote. These kinds of effects are rather conjectural and difficult to assess, and in any case, tend to cancel each other out.

For 1984, of course, the figure has no conjectural elements.

6. Table II provides details about the distribution of double votes as compared to favorable votes (Section 9), when the candidates are bunched in groups of five. Only the top fifty candidates are taken into account.

In both years, the highest ratio was achieved in Group 5 (in 1985, one must carry the computation to one more decimal to see this). In 1984, it is striking that the double votes increase even in absolute number from the second through the fifth group, while the favorable votes are falling steadily.

7. Some of the more striking changes in order due to the double vote are as follows: In 1984, one of the two candidates who would have been tied for ranks 9 and 10 without the double vote, was pushed up to rank 6; and one of the three candidates who would have been tied for ranks 13, 14, and 15 without the double vote, was pushed up to rank 11, and indeed came within a single vote of being elected. In 1985, the effects were less

TABLE II

Group Number	1	2	3	4	5	6	7	8	9	10
Year	1984									
Double Votes	20	15	16	17	22	10	10	9	6	5
Favorable Votes	373	296	268	239	203	184	158	146	132	118
Ratio	.05	.05	.06	.07	.11	.05	.06	.06	.05	.04
Year	1985									
Double Votes	28	18	13	8	16	12	9	10	4	5
Favorable Votes	366	288	259	222	196	162	144	130	120	95
Ratio	.08	.06	.05	.04	.08	.07	.06	.08	.03	.05

dramatic, though there were quite a few instances, fairly high in the order, in which the double vote broke a tie (or brought one about).

It is indeed not surprising that the double vote brings about changes in the order. The number of double votes received by a candidate ranged mostly between 0 and 7 (in one case it was 10), and were often widely different for successive candidates. In total votes, on the other hand, the differences between successive candidates usually did not exceed 2. Under these circumstances, it would be surprising if the double vote did not lead to significant changes in the order.

During the two years under review, the changes in order did not affect the set of candidates elected; i.e., the changes permuted candidates within this set with each other, and candidates outside this set with each other, without affecting the set as such. But there appears no reason to believe that this is a systematic effect.

8. Lowering the cut-off from  $1/3$  to  $1/4$  would have approximately doubled the number of candidates elected in each of the two years under consideration; in 1984 it would have been 23 (rather than 10), and in 1985 it would have been 24 (rather than 13). This is subject to the remarks in Note 5 above.

July, 1986

Unanimously submitted,

Edited January, 1987

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ROBERT AUMANN  
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