

Voting Weights or Agenda Control: Which One Really Matters?

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Abstract Much of the EU institution literature deals with the distribution of voting power in the Council and European Parliament. The increasingly sophisticated models on EU decision making tend to overlook issues pertaining agenda formation and control in various decision making bodies. This article argues that agenda control is extremely important in all collective decision making bodies. Indeed, agenda control may render the voting power distribution issue largely irrelevant.

Keywords Agenda control, amendment procedure, no-show paradox, successive procedure

JEL classification D02, D70

1. Introduction

The European Union and its predecessors have from the 1980's onwards been the focus of much scholarly work. A considerable part of this work has been devoted to determining the power of various member states in the process whereby the EU policies are formed. In particular, the Council of Ministers, one of the three main bodies in the EU machinery, has been under scrutiny. The reason is obvious: throughout the history of the European Union, the Council has been deemed the final arbiter of the community decision making. Moreover, the Council has for long time resorted to weighted voting whereby the member states are given voting weights roughly in accordance with the population sizes. This fact accompanied with the qualified majority rule has made the Council a particularly suitable setting for power index applications. Indeed, these applications of cooperative game theory have mushroomed over the past two decades bringing back to life concepts long forgotten by many a scholar.

The times of the Council single-handedly deciding all major EU matters are, however, now gone. The European Parliament has entered the legislative process as a genuine actor rather than simply as a party to be consulted with before the final decisions are dictated by the Council. Currently, the Parliament can not only delay the decision making but also essentially modify the proposals stemming from Commission and Council. It has even some power to initiate legislation. These developments have to some extent been taken into account in scholarly works on EU decision making (see e.g. Napel and Widgrén 2006), but still today much work deals with only

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one institution, the Council. Undoubtedly, the multi-chamber nature of the EU will be increasingly recognized in academic studies as well.

Another aspect largely ignored by the scholarly community is the way in which the decisions are actually being made in the Council. In fact, very little is generally known about the way in which the Council decisions are reached. Some observers (e.g. Moberg 2009 and Trzaskowski 2009) have emphasized the absence of actual voting in the Council. Similarly the account given by Mattila and Lane (2001) suggests that voting only rarely takes place in the this body. Rather—they argue—it is the presidency that proposes and modifies decision alternatives to reach a consensus decision—or at least one apparently supported by the qualified majority. Thus, while informative and sometimes useful in institutional design, the power indices—both *a priori* and preferential ones—capture but one and seemingly not very important facet of collective decision making. If the aim is to make EU decision making more efficient, then surely not just the weight distribution and majority threshold, but also the voting procedures are of paramount importance. If the decision procedures lead to a stalemate, then even the most just distribution of voting weights is of no practical consequence.

The way in which the decisions in the EU (and elsewhere) are reached depends not only on the voting weight (or, in general, resource) distribution and majority thresholds, but also on the voting procedures and agenda formation principles. These are the foci of the present article. The main results on agenda control and voting procedures are reviewed in an effort to show that it makes a great deal of difference which voting system is used. The difference may in some cases be one between Pareto optimal and sub-optimal outcomes.

There is yet another aspect of EU decision making that is often overlooked in the institutional design literature, *viz.* the way in which various issues to be decided upon are packaged into decision alternatives. This is a very important stage of decision making and one that often calls for political skill. This article tries to show that political skill sometimes plays a quite central role in the formation of public policies. It also emphasizes the role of agenda in determining the policy outcomes.

2. Some paradoxes of representation

In the study of voting, the power of an actor is usually equated with his/her ability to change the collective decision making outcomes to his/her advantage. The underlying idea is that without the presence of the actor, the outcome would be *A*, but when he/she enters the scene, the outcome is *B* and the actor prefers *B* to *A*. *Prima facie*, it would seem that the more resources (votes, money, friends) an actor has, the more able he/she is to change the outcome. Hence the commonly held view that the measure of power should be monotonic in voting resources, i.e. the more resources, the more power.¹

While this common view may be correct in some circumstances, it is not true in general.² Consider the following example adapted from Schwartz (1995) (see also Nurmi

¹ This view is apparently not held by all students of voting power. E.g. the public good index of Holler (1982) fails on voting weight monotonicity. See Holler and Napel (2004) and Turnovec (1998).

² In this section we assume sincere voting, i.e. that the voters vote according to their preferences.

1999, p. 117). Three parties, 1, 2 and 3 are represented in a 100-member legislature. They have 23, 28 and 49 seats, respectively. Three policy options A, B and C are on the table. The parties's preferences over these alternatives are shown in Table 1 be read from left to right.

Table 1. Preferences in a 100-member legislature

Party	Seats	Preferences
1	23	ABC
2	28	BCA
3	49	CAB

Let alternative A be the *status quo*, while B and C are two amendments to it. The widely used parliamentary voting system known as the *amendment procedure* confronts alternatives with each other in pairs in a predetermined order so that the majority winner of each contest proceeds to face the next one, while the loser is eliminated. The winner of the final comparison is the overall winner. With k alternatives, $k - 1$ comparisons are performed.

Suppose that the voting order is: (i) B vs. C, and (ii) the winner of (i) vs. A. In the first comparison parties 1 and 2 will narrowly defeat party 3, i.e. alternative B wins. In the second comparison A beats B with a wide margin. This outcome is the worst possible from the point of view of party 2.

Assume now that party 2 had 4 seats less in the parliament and that these 4 seats were evenly distributed among the other parties, i.e. both parties 1 and 3 would get 2 seats each more. The redistribution would make C the Condorcet winner alternative, i.e. one that defeats all the others in pairwise comparisons with a majority of votes. *Eo ipso* it wins regardless of the voting order. Thus, less representation brings about a better outcome for party 2 than more representation.

In the above example less presentation is accompanied with a better outcome than more representation. This is, however, not the extreme situation. Table 2 exhibits a setting that is more dramatic than the previous one in two ways: (i) less representation leads not only to a better outcome, but to the very best possible one, and (ii) this is achieved when the party in question has no representation at all (Felsenthal 2001). The setting is an example of the strong version of the no-paradox.³

Table 2. Strong no-show paradox

Party	Seats	Preferences
1	2	CBA
2	3	BAC
3	2	ACB
4	2	ABC

³ The no-show paradox has been discussed by Fishburn and Brams (1983), Moulin (1988) and Pérez (2001).

Let the order of voting and the voting system be the same as in the previous example. Then B defeats C in the first comparison and B defeats A in the second. Hence, B is the overall winner. Suppose now that party 4 has no representation at all. In this case C emerges as the winner of the first comparison and is defeated by A in the second. Thus, party 4's favorite alternative gets elected if the party has no representation at all, while 4's second best alternative is elected if it has 2 seats. So, in some cases a group of individuals may be better off by no representation at all than with some representatives. This suggests that other considerations than voting weights should be taken into account in analyzing the determinants of voting outcomes. Two such considerations are the agenda and the voting procedure.

3. Two agenda procedures

It can be argued that all balloting is preceded by an agenda-formation process. In political elections, it is often the task of the political parties to suggest candidates. In committee decisions the agenda-building is typically preceded by a discussion in the course of which various parties make proposals for the policy to be taken or candidates for offices. By agenda-based procedures one usually refers to committee procedures where the agenda is explicitly decided upon after the decision alternatives are known. Typical settings of agenda-based procedures are parliaments and committees.

Two procedures stand out among the agenda-based systems: (i) the amendment and (ii) the successive procedure.⁴ Both are widely used in contemporary parliaments. Rasch (1995) reports that the latter is the most common parliamentary voting procedure in the world. As the amendment procedure it is based on pairwise comparisons so that at each stage of the procedure an alternative is confronted with all the remaining alternatives. If it is voted upon by a majority, it is elected and the process is terminated. Otherwise this alternative is eliminated and the next one is confronted with all the remaining alternatives. Again the majority decides whether this alternative is elected and the process terminated, or whether the next alternative is picked up for the next vote. Eventually one alternative gets the majority support and is elected.

Figure 1 shows an example of a successive agenda where the order of alternatives to be voted upon is B, A, C, D, E, F and G. Whether this sequence will be followed through depends on the outcomes of the ballots. In general, the maximum number of ballots taken of k alternatives is $k - 1$.

As was stated in the preceding section, the amendment procedure confronts alternatives with each other in pairs so that in each ballot two separate alternatives are compared. Whichever gets the majority of votes proceeds to the next ballot, while the loser is set aside. Figure 2 shows an example of an amendment agenda over 3 alternatives: A, B and C.

In Figure 2 alternatives A and B are first compared and the winner is faced with C on the second ballot.

⁴ The terminology in the field is somewhat confusing. So, for example, the amendment procedure is sometimes called successive elimination procedure.

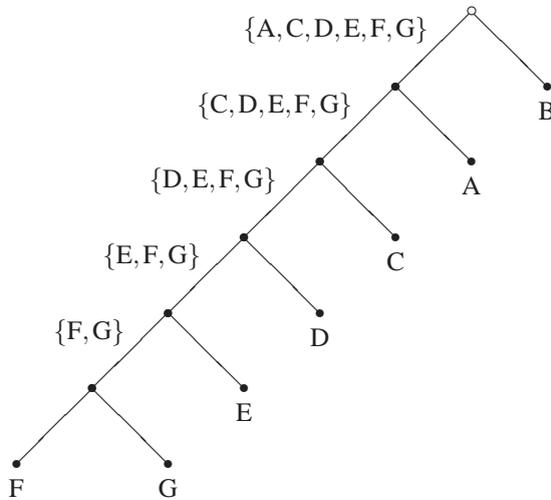


Figure 1. The successive agenda

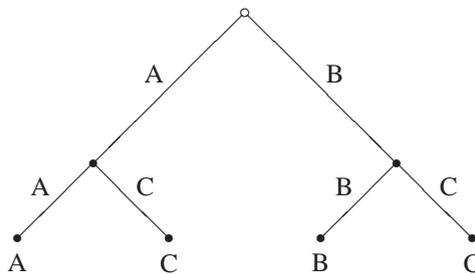


Figure 2. The amendment agenda

Both the amendment and successive procedure are very agenda-sensitive systems. In other words, two agendas may produce different outcomes even though the underlying preference ranking of voters and their voting behavior remain the same. Under sincere voting—whereby for all alternatives A and B the voter always votes for A if he/she prefers A to B and vice versa—the well-known Condorcet paradox provides an example: of the three alternatives any one can be rendered the winner depending on the agenda. To determine the outcomes—even under sincere voting—of successive procedure requires assumptions regarding voter preferences over subsets of alternatives. Under the assumption that the voters always vote for the subset of alternatives that contains their first-ranked alternative, the successive procedure is equally vulnerable to agenda-manipulation as the amendment one, i.e. any alternative can be rendered the winner in a Condorcet paradox profile.

4. What is known about agenda-systems

The agenda-based systems have received some attention in the social choice theory. Thus, we know e.g. the following about the amendment and successive systems:

- (i) Condorcet losers are not elected (not even under sincere voting).
- (ii) Sophisticated voting avoids the worst possible outcomes.
- (iii) Condorcet winner is elected (both under sincere voting and sophisticated) by the amendment procedure.
- (iv) The strong Condorcet winner is elected by both systems.

The first point follows from the observation that the alternative that wins under the amendment procedure has to win against at least one other alternative. Hence, it cannot be the Condorcet loser. Under the successive procedure if the winner is determined at the final pairwise vote, it cannot be the Condorcet loser. If, on the other hand, the winner appears earlier, it cannot be the Condorcet loser either because it is ranked first by more than half of the voting body.

Sophisticated voting avoids Pareto violations. In other words, if the voters anticipate the outcomes ensuing from various voting strategies, the resulting strategy combinations exclude outcomes for which unanimously preferred outcomes exist (see Miller 1995, p. 87).

That the amendment procedure results in the Condorcet winner under sincere voting, follows from the definition. Finally, the strong Condorcet winner—i.e. one that is ranked first by more than half of the electorate—is elected by both systems regardless of whether the voting is sincere or strategic.

To counterbalance the basically positive results mentioned above, there are some negative ones. To wit,

- (i) McKelvey's (1979) results on majority rule and agenda-control.
- (ii) All Condorcet extensions are vulnerable to the no-show paradox (Moulin 1988).
- (iii) Pareto violations are possible under sincere voting.

McKelvey's well-known theorem states that under fairly general conditions, such as multi-dimensional policy spaces, continuous utilities over the policy space and empty core, any alternative can become the voting outcome under amendment procedure if the voters are sincere and myopic. Under these circumstances the agenda-controller determines the outcome even though at every stage of voting the majority determines the winner of the pairwise vote. Although some of the conditions are not so liberal as they seem at first sight, the theorem is certainly important in calling attention to the limits—or rather, lack thereof—that the majority rule per se can impose on the possible outcomes. The upshot is that the majority rule guarantees no correspondence between voter opinions and voting outcomes.

Although no analogous result on the outcomes of the successive procedure in multi-dimensional policy spaces exists, the discussion in the next section shows that it is also very vulnerable to agenda-manipulation.

5. The importance of agenda

An obvious corollary of McKelvey’s theorem is that under the stated conditions the voting outcome may be an alternative that is Pareto dominated, i.e. the winner may be an alternative that every voter regards worse than another alternative that has been eliminated in some pairwise comparison “on the way” to the final outcome. While McKelvey’s theorem deals with many-dimensional real spaces, the Pareto violation—that is the choice of a Pareto dominated alternative—may be encountered in a finite alternative setting. The example in Table 3 illustrates.

Table 3. Pareto violation of amendment procedure

1 voter	AEBCD
1 voter	DAEBC
1 voter	CDAEB
1 voter	EBCDA

With sincere voting and agenda (i) A vs. E, (ii) the winner vs. D, (iii) the winner vs. C, and (iv) the winner vs. B, B wins. Yet, E is preferred to B by everyone. Hence, we have instance of Pareto violation.

We notice, moreover, that all pairwise comparisons result in 3/4 of the electorate supporting the winner. Hence, not even this high a majority threshold enables the amendment procedure to avoid Pareto violations. Indeed, when the number of alternatives exceeds that of the voters, the threshold can be made as high as one vote shy of unanimity using Saari’s (2001, p. 111) ranking wheel construct.

Table 4 illustrates the case where the majority of 6/7 is needed for victory in pairwise comparisons. With the agenda (i) H vs. A, (ii) the winner vs. G, (iii) the winner vs. F, (iv) the winner vs. E, (v) the winner vs. D, (vi) the winner vs. C, (vii) the winner vs. B, B wins. However, all voters prefer A to B.

In the above example there is only one alternative that is Pareto superior to the one elected by the amendment procedure. Saari (2001, p. 100–101) provides a much more dramatic example which is reproduced in Table 5.

Table 4. Pareto violation of amendment procedure with 6/7-majority rule

1 voter	ABCDEFHG
1 voter	HABCDEFG
1 voter	GHABCDEF
1 voter	FGHABCDE
1 voter	EFGHABCD
1 voter	DEFGHABC
1 voter	CDAFGHAB

Table 5. Dramatic Pareto violation of amendment procedure (Saari 2001)

10 voters	ABCDEFGH
10 voters	BCDEFGHA
10 voters	CDEFGHAB

With the agenda (i) F vs. G, (ii) the winner vs. E, (iii) the winner vs. D, (iv) the winner vs. C, (v) the winner vs. B, (vi) the winner vs. A, and (vii) the winner vs. H, the last mentioned wins. Yet, 5 alternatives C, D, E, F, G are unanimously preferred to H.

The successive procedure is also vulnerable to Pareto violations under sincere voting as shown in Table 6. With sincere voting and agenda (i) A vs. others, (ii) C vs. others, B wins even though B is Pareto dominated by A. If the majority threshold is increased the possibility of Pareto violations is not thereby removed.

Table 6. Pareto violation of the successive procedure

1 voter	CABD
1 voter	DABC
1 voter	ABDC

Consider Table 7 and the agenda (i) A vs. the rest, (ii) B vs. the rest, (iii) C vs. the rest and (iv) E vs. D. Assume that to win an alternative has to get 4/5 of the vote total. Under sincere voting E wins (once A and B are eliminated). Yet, alternative A Pareto dominates E.

Table 7. Pareto violation of successive procedure with high majority threshold

2 voters	AEBCD
1 voter	CAEBD
2 voters	BAECD

So, in amendment and successive procedures agenda is a very important determinant of the voting outcomes, especially under sincere voting. In fact, the above examples demonstrate that the voting weight plays practically no role in determining the outcomes. After all, the Pareto violations indicate that the agenda controller can overrule the entire voting body.

6. On limits of agenda-control

But surely committees consisting of experienced politicians or experts would not voluntarily agree to be led to decisions that are blatantly against the most obvious explication of group rationality, *viz.* Pareto optimality. Indeed, there is an antidote to agenda manipulation, *viz.* sophisticated voting. Sophisticated voting by a voter aims at securing the best possible outcome of the voting process, given the other voters' voting strategies; "best" seen from the voter's point of view.

Sophisticated voting in the amendment procedure has been extensively studied over the past decades (Farquharson 1969; McKelvey and Niemi 1978; Gretlein 1983; Banks 1986; Miller 1995; Moulin 1988). The upshot of this research is that, instead of spreading all over the policy space, the sophisticated voting outcomes are always a subset of the Pareto set, *i.e.* Pareto violations do not occur if the voters are strategic. Moreover, the sophisticated voting outcomes are in general located in a proper subset of the uncovered set. This subset is known as the Banks set. Its superset, the uncovered set consists of alternatives not covered by some other alternatives. The definition of covering says that A covers B if (i) A beats B and (ii) A beats everything that B beats.

In the case of successive procedure, sophisticated voting imposes less stringent constraints on agenda control. To wit, any outcome in the top cycle set can be rendered the outcome under the successive procedure if the voters are sophisticated (Miller 1995, p. 85). The top cycle consists of the smallest set \mathbb{A} of alternatives such that all alternatives in \mathbb{A} beat all alternatives not in \mathbb{A} . This set is a superset of the uncovered set and may even contain Pareto dominated alternatives. So, strategic behavior helps, but the upshot remains that agenda control is a very important determinant of the voting outcomes. Indeed, marginal changes in voting weights are of secondary importance when compared to agenda influence.

As was shown above, the actors' influence over outcomes may sometimes be increased with smaller vote shares. The following example illustrates (see Nurmi and Hosli 2003). The decision concerns the location of an EU agency. Alternatives are Brussels, Helsinki and Madrid. For the sake of argument we assume that the distribution of voting weights over preference rankings of alternatives in the then 15-member EU is the one presented in Table 8.

Table 8. Agency allocation example

17 votes	Brussels \succ Helsinki \succ Madrid
30 votes	Helsinki \succ Madrid \succ Brussels
40 votes	Madrid \succ Brussels \succ Helsinki

With sincere amendment procedure and agenda (i) Helsinki vs. Madrid, (ii) the winner vs. Brussels, Brussels wins.

Suppose now that the middle group loses 4 seats to the uppermost and 4 votes to the lowermost one. Madrid then becomes the Condorcet winner and is thus elected. This outcome is clearly preferred Brussels by the "losing" group.

To conclude with a provocative question: why bother with gaining a few units of voting weight if one may be better off with less weight? Of course, the above fictitious example is a special case, but even so calls attention to features often ignored in the voting power analysis.

7. Issue packaging

Political skill is sometimes referred to as an explanation of an actor's success in the political process. Sometimes a person is described as a skillful negotiator. The skills referred to then often pertain to ability to spot common gains of the negotiating parties, to link the problems at hand to a wider context, to inform the negotiating actors of the views and possible reactions of third parties etc. Political skill is basically the ability to construct and de-construct packages of issues. It is a form of agenda control and as such an important determinant of decision outcomes. Moreover, it has nothing to do with voting weights.

The importance of packaging is shown by the following example which is known in the literature as Ostrogorski's paradox (Rae and Daudt 1976).

Table 9. Ostrogorski's paradox

Voter	Issue 1	Issue 2	Issue 3	Majority
1	A	A	B	A
2	A	B	A	A
3	B	A	A	A
4	B	B	B	B
5	B	B	B	B

The example summarizes a party contest where parties A and B are competing in a single-member constituency. Whichever gets more votes is the winner. There are three electoral issues of equal importance to voters: issues 1–3. Each voter has a stand on each of the issues and knows the stands of the two parties with adequate certainty to be able to determine which one is closer to his/her stand on each issue. These closest parties are depicted in Table 9. Thus, for example, voter 1 thinks that A is closer to his/her opinion on issue 1 and 2, while B is closer on issue 3.

Assuming that the issues are equally important to all voters, it is reasonable to assume that each voter votes for the party that is closer to his/her stand on more issues than the other party. The right-most column indicates the parties voted upon.

It is clear that the packaging has a major role in determining the outcome. With all three issues subjected simultaneously to an election, A wins, while B would win in every election should the issues be voted upon separately.

A related phenomenon is known as Anscombe's paradox. In essence, it says that under issue-by-issue majority voting it is possible to end up in a situation where a majority of voters is in a minority—i.e. on the losing side—on a majority of issues.

The example in Table 10 is an instance of Anscombe’s paradox. Voters 1–3 are on the losing side on two issue out of three. Yet, they constitute a majority of voters. The antidote to this paradox is cooperative voting or log-rolling, whereby voters 1–3 would agree on a joint strategy A on issue 1, B on issue 2 and A on issue 3. The outcome would be preferable to each one of the three to the BAB outcome that would ensue without the cooperation.

Table 10. Anscombe’s paradox

Voter	Issue 1	Issue 2	Issue 3
1	B	B	A
2	A	A	A
3	A	B	B
4	B	A	B
5	B	A	B

Anscombe’s paradox also stresses the importance of packaging of issues in determining the outcomes. There is yet another paradox related to packaging of electoral issues. It is described in Table 11.

Table 11. Anscombe’s paradox and packaging of issues

	Issue 1	Issue 2	Issue 3
3 voters	A	A	A
1 voter	A	A	B
1 voter	A	B	A
1 voter	A	B	B
3 voters	B	A	B
3 voters	B	B	A
1 voter	B	B	B
Majority	B	A	A

If the issues are voted upon separately, the outcome as shown on the last row is BAA. Looking at the individual voters, we observe, however, that no voter voted for this package. This possibility is particularly important in contexts where the issues are mutually dependent or non-separable. Again the packaging plays a key role in determining the outcome.

8. Conclusions

All collective decision making bodies, be they of one-person-one-vote type or weighted voting systems, implicitly assume a process whereby the alternatives to be voted upon

are defined. Sometimes this process takes the form of a debate as e.g. in parliaments, sometimes an outside body prepares the proposals to be voted upon. Once the proposals are on the table, the actual choice making begins. This can involve bargaining or voting or some mixture of the two. Voting weights play a role in the voting phase and in the bargaining phase. The standard assumption that inspires most real world political actors is that the influence over the final decision outcomes is positively associated with voting weights. We have seen above that this is not always the case. A party or group may occasionally be better off with less representation (in terms of voting weights) than with more thereof.

Most common agenda-based procedures assign a disproportionate amount of power to the agenda-controller. Indeed, even Pareto violations in outcomes are possible if the voters vote strictly according to their preferences in each stage of voting. In those circumstances the voting weights lose their significance completely.

The art of designing successful issue bundles or political packages plays an important role in determining political outcomes. The issues to be voted upon simply are not “there”, but are constructed by political actors. Aggregating issues into bundles or disaggregating those bundles are important pieces in the toolbox of a successful politician. These tools together with the agenda control seem far more important determinants of decision outcomes than voting weights.

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