Chapter 11
Deliberation and Voting

Abstract The theory of voting often takes the agenda as exogenously given. The deliberative view of democratic decision making focuses on phases of decision process preceding the actual voting, occasionally even replacing the latter with deliberative processes. We discuss the plausibility of presuming that the best argument wins. We also take up issues pertaining to procedures that have to be resorted to when a consensus is not reached. We envisage a most useful role for the deliberative practices in agenda formation.

11.1 Voting With or Without Deliberation

In the preceding we have focused on the phase of decision making that immediately precedes the very act of choosing an alternative or candidate, viz. voting. There are, however, important stages in the decision process that precede the voting. Of particular importance is the stage where the voting alternatives are determined. After all, voting can determine only which alternative or candidate is best – in the sense intended by the voting procedure – of those that are being voted upon. The standard voting theory often glosses over the alternative formulation stage and restricts attention to the mapping from voter opinions regarding the *given* alternatives or candidates to the alternatives or candidates that are deemed best. And yet, the way decision alternatives are processed prior to voting can make an essential difference in the outcomes. In particular, by discussing the alternatives the voters may spot outcomes that benefit no one when compared with the *status quo*. Such collectively inferior outcomes sometimes exist and, more importantly, can actually ensue from some voting procedures unless special precautions are made. The possibility of such Pareto violation of the amendment (a.k.a. successive elimination) procedure illustrates this (see Table 11.1).

Suppose that the agenda of pairwise comparisons is: (i) *B* versus *D*, (ii) the winner of (i) versus *A*, and (iii) the winner of (ii) versus *C*. Suppose furthermore that each voter votes according to his preference in each pairwise comparison and that the winner is always the alternative receiving more votes than its contestant. Then *B* defeats *D* in ballot (i), *A* defeats *B* in (ii) and finally *C* beats *A* in (iii). Upon looking

Table 11.1 Pairwise majority comparisons may lead to Pareto suboptimal outcomes

Voter 1	Voter 2	Voter 3
A	D	B
B	C	D
D	A	C
C	B	A

at Table 11.1 we see that the *C* is Pareto dominated by *D*. Hence, Pareto criterion is violated. In other words, if *D* is the *status quo* alternative, *all* voters are worse off as a result of voting.

11.2   The Role of Deliberation

The advocates of deliberative democracy stress the value of deliberation in improving the quality of collective decisions. This follows from free exchange of information, both factual and normative. The flow of factual information may improve the decisions by helping the participants to identify alternatives that are based on false assumptions, e.g. highways cannot be built through privately owned land without the permission of the land-owner or buying the land, physical punishments cannot legally be applied to school-children in order to root out bullying, military personnel may not be eligible for certain types of public offices, etc. In decision making involving technological projects, people cognizant of technology may be able to rule out certain alternatives as infeasible given our present-day knowledge. Ideally, the exchange of factual and normative information may result in a consensus. Should this happen, then no voting is needed at all.

More common are, however, situations where the deliberation does not lead to a consensus, but only modifies the original alternative set. Even so, the elimination of unrealistic alternatives and possible introduction of new realistic ones, are bound to improve the decision process. Still, the voting stage is required to yield the actual collective decision. The deliberation phase may alter the outcomes in other ways as well. To wit, after exchanging views of the alternatives at hand, the voters are probably more informed about each others' opinions (preferences) than at the outset. Given a known voting procedure, this may change their voting strategy. In particular, the voters may resort to sophisticated instead of sincere strategies. These necessarily exclude the possibility of Pareto dominated outcomes.

A more subtle argument for deliberative process is provided by List et al. (2013). If the main source of trouble in collective decision making comes from the cyclic majority preference relation, as is often argued, then some experimental evidence suggests that deliberation is prone to modify the preferences of the individuals towards single-peakedness thereby increasing the probability of Condorcet winners. If this finding is

robust, then deliberation can reduce the apparent arbitrariness of voting outcomes. Especially, for those advocating Condorcet extension rules this experimental evidence is undoubtedly appealing.

11.3 Deliberation and Agenda Effects

The theory of collective decision making typically starts from a given set of alternatives. This glosses over a crucial determinant of the decision outcomes, viz. the process whereby the alternatives are formulated. Yet, the outcomes can be nothing else but subsets or ranking of the alternative set. If we widen our perspective to include also the alternative formulation stage, a host of negative findings are in front of us. In the following we mention just a few most important ones.

In a path-breaking article based on a pseudo-experiment Plott and Levine (1978) came to the following conclusion:

> Experimental results indicate that within a range of circumstances the agenda can indeed be used to influence the outcome of a committee decision.

The observation is based on packaging different options into bundles and manipulating voting order (agenda). Plott and Levine's target community was a private club of amateur pilots pondering upon the purchase of a new fleet of aircraft consisting of planes of various types. Given the preferences of the club members over various aircraft options, it turned out that basically any desired mix of airplanes could have been made the winner with a suitable packaging of options and the order of voting. A more general statement was later made by Saari (2001, p. 13):

> For a price, I will come to your organization to design your election procedure. You tell me who you want to win. After talking with the members of your organization to ascertain their preferences, I will construct a 'democratic voting procedure' which will ensure the victory of your candidate.

These observations suggest that the voting outcomes are even more agenda-dependent than the pioneering theorems of McKelvey (1979) imply. According to these, in the absence of a Condorcet winner or a majority undominated alternative, the pairwise majority comparisons do not in general guarantee even a rough similarity between voting outcomes and voter preferences. Instead, under sincere voting, the agenda builder can completely determine the voting outcome and yet the winner at each stage is determined by a majority of voters.

In the spirit of Levine, Plott and Saari, Marengo and Settepanella (2012) provide insights to packaging of issues into bundles and to the ensuing changes in social outcomes. In their model choices are made up of bundles of elements called *features*, i.e. $F = \{f_1, \ldots, f_n\}$. Each feature may take on one value out of a finite

set of alternatives. If all features may take $m + 1$ values, there are $(m + 1)^n$ social outcomes, i.e. $n-$ tuples of feature values. An object scheme is a bundling of features into subsets (not necessarily distinct). As an example Marengo and Settepanella discuss a group of people considering how to spend an evening together. The features could be: where to go, when to go, how to go. The values, in turn, are: $\{restaurant, cinema\}, \{7PM, 8PM\}, \{car, walk\}$. A possible outcome would, then, be $(cinema, 7PM, car)$. If the agenda setter can bundle features any way he likes, the outcome can be far away from the individuals' desires. More specifically, Marengo and Settepanella show that it is always possible to manipulate the object scheme in such a way that the median voter theorem does not apply and the social choice may converge to social outcomes very distant from the median voter's preferred one.

The results referred to in this section stress the importance of the formation of the alternatives to be voted upon. It is in this stage that deliberation can play an important role or – to put it in a different way – where the lack of deliberation may undermine the experienced legitimacy of the voting outcomes, no matter how plausible the voting mechanism used in ballot aggregation.

11.4   Topics for Further Reflection

1. Construct a three-voter, three-alternative profile where the amendment procedure can result in each alternative as the winner depending on the agenda of pairwise comparisons.
2. Suppose that the successive procedure is used, i.e. each alternative is voted up or down by a majority vote at each stage of the procedure and winner of the final vote is the overall winner. Suppose moreover that every voter votes for the subset containing his/her first ranked alternative at every stage. Construct a profile and an agenda showing that the Condorcet winner is not elected.
3. What can be said about the election of Condorcet winners and losers under the amendment and successive procedures?

11.5   Suggestions for Reading

Miller's (1995) monograph covers much of what is known about agenda-based procedures. The art and science of packaging of issues is dealt with by Riker's (1982, 1986) books.

Answers to Selected Problems

1. Consider the Condorcet paradox profile:

Voter 1	Voter 2	Voters 3
A	B	C
B	C	A
C	A	B

   If one wants A to win, the agenda should be built so that in the first stage B and C are compared with each other and the winner takes on A in the second voting. If B is to be made the winner, the first vote should be between A and C, whereupon the winner faces B in the second vote. If C should win, then the first vote should compare A and B with the winner confronting C.

2. Consider the following profile:

4 voters	3 voters	2 voters
A	B	C
C	C	A
B	A	B

   Here C is the Condorcet winner. Suppose that the agenda puts C first to a up or down vote. Since it is the first ranked one by only two voters, it will be voted down. If A is the next in the agenda, it will be elected. If B is the next, then A is elected as well. In any event, the Condorcet winner will not be elected.

3. The Condorcet loser cannot be elected under the amendment procedure since in order to win it is required that the candidate defeats at least one other candidate, viz. the one it is confronted with in the final comparison. Since the Condorcet loser defeats no other alternative, it cannot win under the amendment procedure. The successive procedure cannot choose the Condorcet loser, either. If a Condorcet loser is subjected to an up or down vote, it will be defeated since it cannot be the first ranked candidate by a majority of voters in any subset of candidates (if it were, it would defeat the other remaining alternatives and hence would not be the Condorcet loser).

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