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Introduction

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We begin by presenting some examples of majoritarian decision making (postponing definitional and conceptual issues):

When Sthenelaidas had thus spoken he, being Ephor, himself put the question to the Lacedaemonian assembly. Their custom is to signify their decision by cries and not by voting. But he professed himself unable to tell on which side was the louder cry, and wishing to call forth a demonstration which might encourage the warlike spirit, he said, "Whoever of you, Lacedaemonians, thinks that the treaty has been broken and that the Athenians are in the wrong, let him rise and go yonder" (pointing to a particular spot), "and those who think otherwise to the other side." So the assembly rose and divided, and it was determined by a large majority that the treaty had been broken. (Thucydides I. 87)

How did Christians agree on their definition of the Supreme Being, the Triune? It was the work of the bishops assembled at Nicaea in AD 325, made formal and given weight by majority vote and supported after much struggle by later assemblies, notably at Chalcedon (451) – likewise by majority vote. (MacMullen 2006, p. vii)

[In] all matters, the execution of which is entrusted to these twenty five barons, if perchance these twenty five are present and disagree about anything, or if some of them, after being summoned, are unwilling or unable to be present, that which the majority of those present ordain or command shall be held as fixed and established, exactly as if the whole twenty five had concurred in this. (*Magna Carta*, Art. 61.)

M. Chassebeuf de Volney read the minutes from the previous day, stating that the 8th article of the Committee of the Constitution had been rejected by a small majority [453 to 413]. **M. de Martineau**: None of the earlier minutes offer such information: I request that it be taken out, being an injury to the legislative body whose majority, be it large or small, must always determine the law. **M. Chasssebeuf de Volney:** Since it is in the interest of the

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nation and of the following legislatures to know the exact value of a decree, it is desirable to include the number of votes for and against it in the minutes. **The President** consults the assembly, which decides [by an unknown majority] not to vote on M. de Volney's proposal, and announces the suppression of the extract from the minutes that M. de Martineau attacked. (AP 10, p. 422–223)

Two individuals, whom I shall call Pierre and Paul, are accused of theft; to the question whether Pierre is guilty, four jurors say *yes*, three others *yes*, and the five remaining *no*: the defendant is declared guilty by a majority of seven votes to five; to the question whether Paul is guilty, the first four jurors say *yes*, the three others who had said *yes* against Pierre say *no* against Paul, and the five remaining say *yes*: Pierre is therefore declared guilty by a majority of nine votes to three. Next one asks whether the theft has been committed by *several* individuals, which in case of an affirmative answer entails a more serious punishment. Following their previous votes, the first four jurors say *yes* and the remaining eight who had declared either Paul or Pierre to be innocent, say *no*. Hence even though there is no contradiction in the votes of the jurors, the decision of the jury is that both are guilty of theft and that the theft has not been committed by several individuals. (Poisson 1837, p. 21 n.)

At various points later in this chapter we return to aspects of majority decisions suggested by these passages. First, however, we need to explain what we shall understand by majority decision. We begin by stating a standard or benchmark definition, and then proceed to explore some complications.

The standard case. A group with an odd number of members faces the choice between two options. Once each member has sincerely expressed which option he or she prefers, the majority decision is the one that is preferred by the largest number of voters. Abstaining from voting, or stating that both options are equally good, is not allowed. The groups deciding in this way include juries, multi-judge courts, expert committees, assemblies, electorates, and international bodies. The objects of the decisions range from choice of religious dogma, as in the Nicene council, to decisions to go to war, as in the example from Thucydides.

Two main cases arise. In the first, the decision applies to the members of the group, and perhaps only to them. When one party defeats another in an election, for instance, both the winner and the loser are directly concerned with the outcome. The loser may well be tempted to contest or disobey the majority decision, and abstain from doing so only by the greater physical force of the majority (see Vermeule's chapter in this volume). In the second, the decision applies only to a third party or third parties. When a jury voting by majority decision finds the accused guilty, neither the majority nor the minority are personally affected. In fact, great care is usually taken to *exclude* jurors who might be affected. One cannot, therefore, subsume majority voting in general under the adage of "what affects all must be decided by all" (*quod omnes tangit ab omnibus comprobetur*). Nor, for the same reason, are majority decisions necessarily democratic.

Complications (1). The members of the group may themselves be groups. This case is explored in Beaud's chapter on federal systems and in Elster's chapter on nested majorities. If majority decision is understood as requiring a favorable vote by a majority of the groups, each group first has to form its collective preference.

In doing so, it can use majority voting or any other method. A proposal favored by majority vote in a majority of the groups need not have a majority in the *population*, understood as the set of all members of all groups. If the estate system had not broken down in the French Estates-General in 1789 and the three estates had proceeded to decide by majority vote within and by the three orders, 302 delegates could have outvoted 898.

Majority voting within and by each group is a form of *double majority* voting. A *triple majority* is required if the proposal also has to be passed by the majority of the members of the population. This is the rule, for instance, in amending the Swiss constitution by referendum (see Beaud's chapter). A different principle of double majority can be defined by requiring (1) a favorable majority within each group and (2) a favorable majority of the population, together with (3) a favorable supermajority of the groups. De facto, this is the rule for amending the Australian constitution: the constitution states only that a "majority" of the six states has to be favorable, but as the number of states is even, two thirds of the states have to approve any change.

Complications (2). The voting group may have an even number of members, either by statute or because of incomplete attendance. In that case, "the largest number of voters" is not a well-defined concept. With even numbers of voters, majority voting is not *decisive*, in the sense of May (1952). In some cases, institutions are deliberately created with an odd number of members to block this possibility. Constitutional courts and supreme courts that exercise judicial review provide some illustrations. The Norwegian Supreme Court, composed of twenty judges, divides itself into smaller odd-numbered groups to decide whether to grant certiorari (three judges) or to try cases (by five or eleven judges, depending on the importance of the case). The odd numbers are deliberately chosen to prevent ties. On the rare plenary sittings, the most junior judge steps down to prevent a tied vote. The German constitutional court, which is divided into two "senates" with eight members each, rejects claims of unconstitutionality when the vote is tied. When the U.S. Supreme Court for some reason sits with an even number of judges instead of the full court of nine, a tied vote implies that the decision by the lower court stands. (The case does not, however, create a precedent.)

Committees and assemblies with an even number of members can achieve decisiveness by a mechanism for breaking ties. Often, they are broken by a predesigned member who casts two votes in case of a tie. This member can be the president of the group, the oldest member, or the most senior member. Alternatively, ties may be broken by a lottery (which is equivalent to allowing a member chosen at random to cast two votes). The Swedish parliament used this practice between 1973 and 1976. After the abolition of bicameralism, the first election to the unicameral parliament gave the government the support of 175 members, while the opposition could mobilize an equal force of 175

members. In a number of cases a tied vote ensued, and the final decision had to be determined by lot. To avoid recurrence, the number of seats was reduced to 349. Although ties may still occur if some members are absent, this case is presumably less likely to arise if the decision is important, because party whips will then make an effort to ensure the presence of their members or arrange a "pairing" with the other bloc.

As the Australian case illustrates, voting in even-numbered groups can also be made decisive by requiring the *smallest possible supermajority*. One might, in fact, consider this requirement as an extension or generalization of majority rule. Some twelve-member juries, for instance, have decided by majorities of seven to five. In such cases, one might suspect that the choice of an even number of jurors was deliberate, and made for the purpose of preventing conviction by a bare majority. Although the latter practice is rare, it is occasionally observed. In Scotland, the fifteen-member juries may convict by a majority of eight to seven. In 1945, the French High Court (a large jury) sentenced Maréchal Pétain to death by fourteen votes against thirteen. In a second vote taken at the request of some jurors, however, the court decided by seventeen votes to ten to ask for clemency. It is at least conceivable that the closeness of the first vote inspired the demand for the second.

Complications (3). In many assemblies and committees, simple majority is distinguished from absolute majority, the former being a majority of the votes cast and the latter a majority of those entitled, by virtue of their membership, to cast a vote. (One may also talk of simple versus absolute supermajorities, to distinguish, for instance, between the requirement that two-thirds of those voting approve a decision and the demand that two-thirds of those entitled to vote do so.) In an assembly with 100 members and an attendance of 50, 26 members could force a decision to which the other 74 percent might be unanimously opposed. In the 2012 referendum on the Egyptian constitution, 64 percent voted "Yes," but the turnout was only 33 percent. In such cases, it is obviously misleading to refer to the vote as an expression of "the general will" or "the general interest."

In the article we cited from Magna Carta, there is no reference to a lower limit on the number of members who are present to vote. This omission is not typical. Usually, committees and assemblies that decide by simple majority are constrained by a *quorum*, that is, a minimum number of voters who have to be present for any vote to yield a valid decision. In referendums, too, quorums are commonly, but not universally, observed. In many cases, the quorum is itself a majority of those entitled to vote, although larger and higher percentages are also observed. If the rules stipulate that decisions be made by simple majority constrained by a quorum, a minority may get its way by refusing to show up (a "no-show paradox"). Thus in an assembly of 100 with a quorum of 60, a minority of 45 can frustrate the wishes of the majority. An example can be taken from a 1787 vote by the Philadelphia legislature to call for a state convention to ratify the constitution proposed by the Federal Convention. The assembly

forcibly dragged back members who had left the assembly to prevent a quorum (Maier 2010, p. 65). Another failed attempt occurred in 1839, when Abraham Lincoln, serving as a Whig in the Illinois House of Representatives, jumped out of the building to prevent Democrats from getting a quorum to vote on a banks bill. There have been many such attempts in American state legislatures to prevent a quorum, with legislators sometimes fleeing their state to prevent state troopers from forcing them to attend. In 1988, a similar but unsuccessful attempt occurred in the U.S. Senate.

The wishes of a majority may also be thwarted if some members fail to show up because of *fear*. The attainder of the Earl of Strafford in 1641 offers a well-known example. In the House of Commons, the bill of attainder passed by 204 votes to 59. "It may seem surprising that on a matter of such intense public interest little more than half the House was present. . . . The explanation is that many members absented themselves, either because they felt . . . that to kill Strafford without due process of law was an abuse of parliamentary power, or because they were afraid of exposing themselves by voting against the bill" (Woolrych 2002, p. 177). We do not know what the vote would have been with a fuller attendance. Hume (1983, p. 323) affirms, however, that the vote in the House of Lords would have gone the other way but for popular pressure: "About eighty peers had constantly attended Strafford's trial; but such apprehensions were entertained on account of the popular tumults, that only forty-five were present when the bill of attainder was brought into the house. Yet of those, nineteen had the courage to vote against it; A certain proof, that, if entire freedom had been allowed, the bill had been rejected by a great majority." The House of Lords at the time had about 160 members. The quorum stood at three.

Complications (4). When there are three or more options, the standard case does not arise. Instead, one can select a winner by one of several procedures. (1) The winner can be chosen by a "plurality" decision, that is, by selecting the option that has received the largest number of votes (with tie-breakers if necessary). Elections to the British parliament follow this principle. If there are many candidates, the winner could in theory receive a very small number of votes. There is, however, an often-cited tendency ("Duverger's law") for plurality voting to generate two-party systems, so that the plurality winner does in fact tend to receive a majority of the votes. (2) One can use two-step voting (run-offs) in which majority voting is used to choose between the two options that received the largest numbers of votes in the first round. This practice is used, for instance, to elect the French president. (3) One may choose the option (the "Condorcet winner") that beats all others in pairwise majority voting. Sometimes, however, there is no such option. The "Condorcet paradox" arises when a majority favors option A over B, another majority favors B over C, and still another majority favors C over A. We cannot even begin to survey the huge social-choice literature comparing these and other voting systems. In the present volume, Mackie's chapter and the chapter by Balinski and Laraki discuss many of these issues.

Complications (5). In the standard case, voters have no incentive to vote insincerely, at least if the vote is by secret ballot. With open voting, however, some voters may feel ashamed of expressing their sincere preference, perhaps because they believe they are in a minority. "Suppose a juror fears that her position is unpopular, or appears insensitive or stupid. Before raising her own hand, she will look around the room to see how many other hands are going up. Other like-minded jurors might be employing the same strategy. The result can be zero votes for a particular verdict, despite the fact that several jurors actually support it" (Schwartz 2006). There is nothing to exclude that a *majority* of the jurors might support that verdict but fail to express their support. That would be a case of *pluralistic ignorance* (see Elster, Chapter 8 in this volume), in which a majority of jurors vote for one verdict because they believe, falsely, that they form a minority favoring the alternative verdict.

When cases (2) or (3) listed under Complications (4) arise, the secret ballot can also create an incentive for insincere voting. In fact, the well-known Gibbard-Satterthwaite theorem states that *all* (deterministic) voting systems create such incentives when there are three or more alternatives. When faced with this objection to his own proposal, the Comte de Borda is supposed to have replied that his system was intended only for honest men. One might conjecture that he would have made a similar comment about Abraham Lincoln's behavior reported earlier in the chapter. Strategic misrepresentation of preferences and strategic abstention from attending are both forms of "gaming the system" that may seem tempting on a given occasion but that in the long run can have the effect of undermining confidence in the political system.

Complications (6). Voters may be asked to express an *opinion* rather than to state a preference. Jurors, for instance, are asked to say whether they *believe* that the accused did what he is accused of. (They may also be asked to state whether they *prefer* a severe or a more lenient sentence.) When aggregating individual opinions, the paradox stated by Poisson can easily arise. There are two ways of forming a majority opinion about, say, a verdict. On the one hand, one can simply ask each juror which verdict she favors (in Poisson's example, whether the accused is guilty of a crime committed by several individuals), and then follow the majority. On the other hand, one can, in the same example, ask each juror to state her beliefs about the guilt of each of the two accused, and then draw the logical conclusion about their joint guilt. As Poisson showed, the one-step aggregation of conclusions and the two-step aggregation of premises can lead to opposite results. Moreover, there is no logical or normative reason to prefer one method to the other. This paradox is not a mere curiosum, but one that arguably arises in many contexts, for instance in the U.S. Supreme Court (Kornhauser and Sager 1993; Caminker 1999; Nash 2003).

The Condorcet Paradox and the Poisson Paradox show that majority preferences and majority beliefs can be *indeterminate*. Even when individual preferences and beliefs are known, there are situations in which aggregation by majority voting fails to yield a well-defined result. This fact points to a profound

difference between individual decisions and majority decisions. Individuals usually have well-defined aims (stable or not) and well-defined beliefs (rational or not) about how to realize them. If we think of majority preferences as defining the aim of the group and of majority beliefs as determining the means for reaching that aim, the paradoxes show that the analogy has only limited validity.

Complications (7). The idea of preference underlying the standard case is very impoverished, in two distinct respects. First, it does not take account of *intrapersonal* differences in the intensity of preferences. An assessment of options in terms of ordinal preferences – "I prefer heaven to hell, just as I prefer four apples to three" – clearly does not tell the whole story. This problem can be addressed, to some extent, by vote trading. Two blocks in an assembly can make each other better off if the first votes against its preferences on an issue that the other cares strongly about, in exchange for the other voting against its preferences on an issue that the first cares strongly about. There may be majority for non-X against X and a majority for non-Y against Y, but a majority for (X and Y) against (non-X and non-Y). On a large scale, such bunching of different issues result in the "Christmas Tree bills" regularly passed by the U.S. Congress. As this example suggests, the normative appeal of such vote trading can be dubious.

Second, the standard case does not take account of *interpersonal* differences of welfare. If option A would provide a small increment in welfare (four apples rather than three) to each member of a 51 percent majority, while at the same time causing a large loss of welfare (hell rather than heaven) to each member of the 49 percent minority, it would seem wrong to go with the majority. Although this example is contrived, there are many realistic cases. A small majority of citizens of a country might be mildly in favor of joining the European Union, against the strong wishes of a large minority. To follow the majority might seem unfair, but how to assess the strength of the preferences? This problem is usually thought to be intractable (Elster and Roemer 1993). There is no reliable and valid procedure for comparing the preference intensities of different individuals.

In elections, however, one can substitute qualitative *grading* for ordinal ranking, as explained in the chapter by Balinski and Laraki. In the case of presidential elections, the procedure they propose requires voters to assign grades to the candidates, ranking from Excellent to Reject (ensuring cardinality). Moreover, these grades have roughly the same meaning for all voters (ensuring interpersonal comparability). As they explain, the use of these information-rich inputs to the voting mechanism blocks has many advantages over simple majority voting.

Complications (8). Some apparently majoritarian procedures are, on closer inspection, not majoritarian. We have already mentioned how simple majority decisions may thwart the wishes of the majority of the members of the group. Two other examples may be cited. Bicameral systems that require majority approval in each house may de facto create a supermajority requirement. As

Bentham (1999, p. 24) noted, "The division of the legislative body . . . will often have the effect of giving to the minority the effect of the majority. The unanimity even of one of the two assemblies would be defeated by a majority of a single vote in the other assembly." Indirect (two-step elections), as were practiced in the elections to the U.S. Senate before 1913, can also give power to a minority, as in the following example: "Suppose that in each of seven . . . districts the vote was 60% in favor of the representative wanting to choose candidate A and 40% in favor of the representative wanting to choose candidate B. In [three other] districts, 20% of the voters favored the representative wanting to choose candidate A and 80% the representative wanting candidate B. When the ten representatives meet, they will vote 7–3 in favor of candidate A. But in terms of the wishes of their constituents, a majority of 52% (0.7 × 40% + 0.3 × 80%) preferred candidate B" (Shalom 2009).

In some supranational bodies, such as the European Council of Ministers, the potentially distorting effects of two-step elections are to some extent corrected by weighing the votes. The method most in the spirit of majority decision might seem to be a weighing of the votes in proportion to the population of the member states. In practice, however, smaller states are always weighed more and larger states less than sheer proportionality would indicate. Although normative arguments have been proposed favoring non-proportionality (Penrose 1946), they may rest on questionable assumptions (Gelman, Katz, and Bafumi 2004).

Complications (9). The idea of "the members" of "the group" may need unpacking. In some cases, the group and the members are chosen by an outside party. This is the case for juries and for many expert committees that decide by majority voting. Usually, parliaments decide who will have the right to vote in national elections. In some cases, however, the group somehow constitutes itself. An existing group may decide by majority voting that future decisions will be taken by majority voting within a subset of itself or within a superset that includes itself. The subset case is illustrated by the French constitution of 1795, which has been called "an aristocratic constitution adopted by democratic means" (Troper 2006, p. 89). The draft constitution, which imposed strict economic qualifications on members of the electoral assemblies, had to be approved by the electoral assemblies as defined by the constitution of 1793. In the latter document all citizens, defined as adult males, had the right to vote. The constitution was approved by an overwhelming majority in an election with a very low turnout. The more frequent superset case arises whenever an existing electorate decides to expand the suffrage. More surprisingly, the superset is sometimes allowed to create itself. Thus the 1830 Virginia constitution was "ratified in an election open to all who were prospectively enfranchised by it" (Pole 1966, p. 322).

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Simple majority voting can be placed somewhere in the middle of a spectrum with dictatorship at one extreme and unanimity at the other. Between

dictatorship and simple majority voting, we find submajority rules. Between simple majority voting and unanimity we find absolute majority voting and decisions by supermajorities. All these procedures have been used at various times and places to decide on various issues. In addition, there is large variation in the existence and the size of a quorum for voting. Two questions arise naturally. First, how can one *justify* the use of one or the other of these procedures to decide on a given issue or set of issues? Second, how can one *explain* their adoption? The answer to the justificatory question might also be the answer to the explanatory question, if groups somehow gravitate naturally toward optimal procedures.

The questions take different forms when the decision applies to members of the group and when it applies to third parties. We begin with the first case.

Consider a natural and seemingly plausible theory that might answer both questions: if we place the issues on a *spectrum of importance*, it will be found to match the spectrum of voting procedures, the more important issues requiring a larger fraction of the votes. (For simplicity, we shall ignore the issue of quorum.) A clear case is provided by French condominiums, which combine weighted voting (weights defined by apartment size) with decision procedures that impose the use of simple majority, absolute majority, two-thirds supermajority, and unanimity in deciding increasingly important issues. The Articles of Confederation under which the United States were governed from 1781 to 1787 stated that issues were to be decided by simple majority vote except in a series of enumerated questions (involving war, treaties, monetary matters, and admission of future states) for which the vote of nine out of thirteen states was required. Any change in the Articles themselves had to be unanimous. In Spain, "organic laws" have intermediate status between the constitution and ordinary laws. Whereas the latter can be adopted by simple majority, organic laws require an absolute majority. A somewhat similar distinction exists in France. In both countries, amending the constitution requires a supermajority (we simplify).

The theory might also seem to be supported by the use of submajorities. (For examples and a brief discussion, see Jon Elster, Chapter 8 in this volume.) On the one hand, these are virtually never used to make new substantive decisions. Although a substantive decision by a submajority might be appropriate if one could somehow verify that it held stronger views on the topic than those of the majority, we have already noted the unfeasibility of this idea. In practice, submajorities are used only to force procedural decisions, such as granting certiorari. Because the decision to let a case come before the Court is in an obvious sense less important than deciding the case itself, the theory is confirmed. The theory also implies that dictatorial power should be exercised only in minor matters, an implication that seems confirmed by the weak powers of presidents of assemblies and committees.

The theory breaks down, however, at the other end of the spectrum. Constitution-making provides a compelling counterexample. As constitutions are undeniably more important than ordinary laws, the theory implies that

constituent assemblies should decide by a supermajority and perhaps by unanimity. This implication is not supported by the facts. Framers *never* adopt the rule of unanimity for themselves but, almost without exception, decide by simple majority. The very important decision of adopting a constitution virtually always requires a smaller majority than the less important decision of amending it. The explanation is that constitution-making usually takes place in a period of crisis, in which the status quo cannot serve as a default option. By contrast, the constitution, once adopted, serves a default option to amendment proposals.

The second case, in which the collective decision affects a third party only and not the decision makers themselves, must be approached differently. Juries provide the best example (see Melissa Schwartzberg, Chapter 10 in this volume). As already mentioned, juries may decide by simple majority or by the smallest possible supermajority. Historically, however, unanimity has been the rule, at least in criminal cases. According to James Stephen (1883, p. 304–305), "[the] justification of the rule ... seems to me to be that it is a direct consequence of the principle that no one is to be convicted of a crime unless his guilt is proved beyond all reasonable doubt. How can it be alleged that this condition has been fulfilled so long as some of the judges by whom the matter is to be determined do in fact doubt?" Akhil Amar (1995, p. 11, 89–90) argues, however, that "most of our analogies tug toward majority rule – legislatures generally use it; voters abide by it; appellate benches follow it (even in criminal cases); and grand juries are governed by it – or supermajority rule: in the impeachment context, the House, acting as a kind of grand *jury*, votes by majority rule, but the Senate, acting as a kind of petit *jury*, must summon a two-thirds vote to convict." For some writers, the fact that the unanimity requirement leads to more hung juries and costly retrials also counts against it. Others argue that a regime in which eleven out of twelve jurors are sufficient for a verdict can be justified by the protection it offers against conformism and social pressure.

For important political decisions, the choice between a dictator and some form of majoritarian (or supermajoritarian) decision procedure is hardly controversial. In the legal context, however, the choice between a dictator (a single judge) and a jury has been much debated, notably with regard to complex civil litigations. (For opposing views, see Sunstein et al. 2002, ch. 11, and Vidmar and Hans 2007, pp. 163–164.) During the American War of Independence, Alexander Hamilton (1780) complained about the inefficiency of multi-member bodies:

> Lately Congress ... have gone into the measure of appointing boards. But this is in my opinion a bad plan. A single man, in each department of the administration, would be greatly preferable. It would give us a chance of more knowledge, more activity, more responsibility and of course more zeal and attention. Boards partake of a part of the inconveniencies of larger assemblies.

This argument, of course, goes against Condorcet's claim (see Schwartzberg's chapter in this volume) that larger assemblies are better (under certain