How is this calculated? There are four possible ways for the majority to get the right answer. Because these possibilities are mutually exclusive, we can find the probability that one of those four would happen by finding the probability of each possibility and adding them together:[3]

Possibility 1: Jurors 1 and 2 are right and Juror 3 is wrong, 60%×60%×40%=14.4%
Possibility 2: Jurors 1 and 3 are right and Juror 2 is wrong, 60%×40%×60%=14.4%
Possibility 3: Jurors 2 and 3 are right and Juror 1 is wrong, 40%×60%×60%=14.4%
Possibility 4: All the Jurors are right, 60% × 60% × 60% = 21.6%

Adding up these probabilities gives us 64.8%.[4]

Notice the probability of a correct verdict with three jurors is higher than with one juror: the more jurors we have, the more likely it becomes that a majority will choose the correct verdict. So, if we have 25 jurors, the chance that a majority selects the right verdict rises all the way to 84.6%.[5] In fact, so long as each juror is more than 50% likely to get the right verdict, as we add more jurors, we get closer to a 100% chance of a majority reaching the correct verdict.[6]

2. The Jury Theorem as an Argument for Democracy

There are many similarities between Condorcet's Jury Theorem and the voting behavior of citizens in an ideal democracy. Because of these similarities, philosophers have used the Theorem to argue that democracies are effective at choosing the best political candidates and policies.

First, just as jurors each choose a verdict, democratic voters each make independent decisions in voting, in many cases by casting secret ballots.

Second, in the courtroom, lawyers present the evidence to the jurors, while in democracies, public institutions take measures to help voters make good decisions, with schools teaching students about governmental processes and news sources informing citizens about political candidates and policies. So in an ideal democracy, voters are competent and informed, with a better than 50% chance of choosing the best politicians and policies.

An important difference between juries and democracies, however, is that voting takes place with
a very large number of citizens. Even smaller countries have far more voters than 25 jurors so, if all of Condorcet’s assumptions hold, democracies would choose the best candidate by majority vote almost 100% of the time.\[7\]

**3. Criticisms**

Of course, most people think that democracies often don’t choose the best. Does this mean that this argument for democracy is a complete failure?

No, but it does show that we need to look more carefully at the differences between Condorcet’s Jury Theorem and actual democratic voting to see if a similar, weaker argument might still be successful.

First, in the jury case, there is a correct and an incorrect verdict: either guilty or innocent. In voting, however, the choices are not just correct or incorrect. Particular candidates or policies might be less effective, but they are not ‘correct’ or ‘incorrect’ in the way a guilty verdict can be.

This difference can potentially be fixed. We could think of voters as choosing, not just right and wrong candidates and policies, but better and worse ones. If voters are more likely than not to choose the best, then we can still apply the Condorcet Jury Theorem to democracy.\[8\]

Second, political problems are usually more complex than court cases. Even if jurors can decide whether a defendant has committed a crime, it is more challenging to choose the best social, economic, or immigration policy, much less choose all of them at the same time by voting for a specific politician’s entire platform.

This calls into question whether democratic voters really are able to choose the best option over 50% of the time. This difference is much more difficult to fix, as it would be very demanding for citizens to become experts in all of these areas.\[9\]

Finally, even though citizens cast votes independently, they rarely reach decisions independently. In court cases, care is taken to prevent the jury from being biased by talking to family or reading outside news sources.

In democracies, though, isolating individuals in these ways is not feasible. Furthermore, it is not clear this is a difference we would want to fix. Totalitarian regimes are notorious for limiting the political information that citizens receive, whereas democracies are praised for facilitating a free exchange of ideas.\[10\]

**4. Conclusion**

Some philosophers have claimed that Condorcet’s Jury Theorem can provide a defense of democracy. The many differences between the setup of Condorcet’s Theorem and democracies make it clear that further arguments are needed to show that, despite these differences, democracies would still regularly choose the best.

**Notes**


[2] Condorcet’s Jury Theorem does not apply to all jury decisions. The United States, for example, does not allow decisions in criminal cases to be decided by majority vote, requiring that the jurors reach the final verdict unanimously. Similarly, the jurors do not judge independently; they confer with each other and presumably influence each other’s judgments.

[3] In this case, we can simply multiply the individual probabilities in each possibility (for example, as in 60% × 60% × 40%), because we’re assuming that the jurors’ decisions are independent of each other. And we can add together each of the four possibilities to reach a final probability that at least one would be true, because the possibilities are mutually exclusive: no two can be true at the same time, because each is inconsistent in some way with all three other possibilities. For more, see The Probability Calculus by Thomas Metcalf.

[4] More generally, we can use the formula –

\[
\sum_{i=m}^{N} \left( \frac{N!}{(N-i)!i!} \right) (p)^i (1 - p)^{N-i}
\]

– where "N" is the quantity of voters, "m" is the quantity of voters needed to count as a majority, and "p" is the probability that an individual voter will reach the correct decision.

[5] To find the probability of getting the right verdict via majority vote for any number of jurors and levels of competency, you can use this link. In the associated site (Wolfram Alpha n.d.), you can see that “3” has already been entered for the total quantity of jurors, “2” has been entered for the quantity of jurors needed to achieve a majority, and “0.6” has been entered for the probability per juror of reaching the
correct verdict, but you can change the numbers to run other calculations. For example, if each juror is 0.55-probable to reach the correct verdict, there are 11 jurors, and therefore 6 required for a majority, replace the “3” with “11,” the “2” with “6,” and the “0.6” with “0.55” throughout.

[6] Think of it like this. It is difficult to tell if a coin is fair after only a couple flips. It is possible that it lands heads on the first two flips, making it look like it is unfair. However, the more times you flip a fair coin, the more and more likely it is that it will come up heads about 50% of the time. So having more flips is a good way to reveal the true odds of the coin landing heads. Likewise, if voters are 60% likely to get the right answer, it might be difficult to tell that after only a few voters, but adding more voters makes it more and more likely that they will get the right answer about 60% of the time, ensuring that a majority picks the correct verdict.

[7] Democratic voting often includes more than two choices. With the jury, there were just two options – guilty and not guilty. At the ballot box, though, voters might have to choose between many different politicians and policies. This difference can potentially be fixed. Governments could require that all ballots only offer two choices, and some philosophers have argued that the Condorcet Jury Theorem can work with multiple options, just so long as voters are more likely to pick the correct alternative than they are each of the incorrect options. See Goodin and List (2001).

[8] In fact, the Theorem works with any particular property when one outcome has the property and the other lacks it. For example, if one politician will help the poor more than the other, and each voter has a 51% chance or greater to select the politician who will help the poor more, then Condorcet’s Theorem shows that, as we add more and more voters, it becomes more and more likely that voters will select the politician that will assist the poor more effectively.

[9] Section 4, “Political Knowledge, Morality, and Blame,” of Thomas Metcalf’s Ethics and the Expected Consequences of Voting briefly reviews evidence to believe that at least most Americans have relatively little politically-relevant knowledge: they are far from experts on which political policies and candidates are likely to be best.

[10] For an overview of defenses of democracy that are based on the sharing and discussing of reasons for various politicians and political policies, see Min and Wong (2018).

References
Related Essays
Ethics and the Expected Consequences of Voting by Thomas Metcalf
Free Speech by Mark Satta
John Rawls’s “A Theory of Justice” by Ben Davies
The Probability Calculus by Thomas Metcalf

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