

Inequality and Majority Rule

Formal Ethics 2019

1. Introduction

Majority rule (MR) has a rather peculiar status in democratic theory. While MR is regularly used by both public and private organizations, arguments for MR are often far from convincing. Epistemic considerations in favor of MR, for instance, often rest on the stringent assumptions underlying the Condorcet jury theorem. Alternatively, while MR is thought to be compatible with democracy and political equality, a variety of authors have recently argued that MR is not unique in this regard (Risse 2004; Saunders 2010a). This realization has in part prompted serious interest in familiar alternatives to MR (supermajoritarian rule) as well as less known voting schemes (lottery voting). In this paper I provide a novel defence of MR. As is often the case when groups must collectively decide, some portion of the voting body is frustrated while others ‘get what they want’. I consider the distribution of voter satisfaction in response to the outcome of a vote and prove that under certain conditions MR minimizes the level of inequality present in the distribution of voter satisfaction. Thus, there is a sense in which MR ensures equality at *both the level of procedure and outcome*.

2. MR and equality

We assume individuals derive some satisfaction from the outcome of a vote. In particular, individuals are assumed to secure some rather high level of satisfaction when their preferred candidate wins, and some smaller level of (dis)satisfaction if their least preferred candidate wins. There is some precedence for this approach, as philosophers such as Luc Bovens, Stephan Hartman and Claus Beisbart have explicitly evaluated voting mechanisms on the basis of satisfaction/utility maximization. In what follows, we provide a means of quantifying the level of *inequality* present in the distribution of voter satisfaction after an election. We draw on the Gini coefficient, a commonly used measure of income inequality. This measure can take on any value from 0 to 1 and, in the case of income, corresponds to the ratio of the region A to the region constrained by the uniform distribution line and the x-axis (see figure 1). The straight line of figure 1 is the so-called uniform distribution line and represents the situation in which income is distributed equally among all in the community. The kinked line (the Lorenz curve) describes a community in which the richest one-fifth of the population has three-fourths of the overall income.

Although the Gini index was originally intended to measure income inequality, this indicator has more recently been used to explore inequality in a variety of contexts such as educational attainment, opportunity, and even happiness. For our purposes, the Gini index will be adapted to measure the level of inequality present in the distribution of voter satisfaction after an election. Reinterpreting figure 1, we would say that the result of the election has resulted

in a distribution of satisfaction such that 20% of the population accounts for 75% percent of the total satisfaction in the population.¹

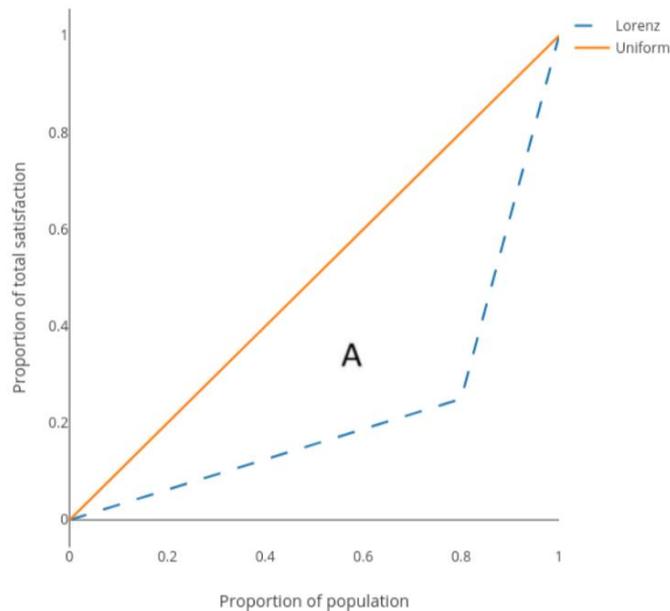


Figure 1: Lorenz curve and the uniform distribution line.

3. MR minimizes inequality

We can show that MR will always select the candidate that results in the distribution of satisfaction with the smaller Gini coefficient (less inequality) when *Equal Intensity* holds. Equal intensity stipulates that all individuals receive the same level of satisfaction when their preferred alternative wins (resulting in satisfaction level of 1) and the same level of satisfaction when their least preferred alternative wins (satisfaction level of 0). While equal intensity is quite restrictive, we'll relax it in the next section.

Claim: When EI holds, MR always selects the candidate with the smaller Gini coefficient.

Support:

In the case shown in figure 2, 60% vote for A and 40% vote for B. Under MR, B wins, meaning the distribution of satisfaction is represented by Lorenz 1 in figure 2. If counter to MR instead A wins, then the distribution of satisfaction is represented by Lorenz 2. It is clear from the figure that the Gini coefficient associated with the MR winner is less than the coefficient associated with the MR loser.

¹ We are assuming that satisfaction can be meaningfully compared interpersonally and that it is measured, as income is, on a ratio scale.

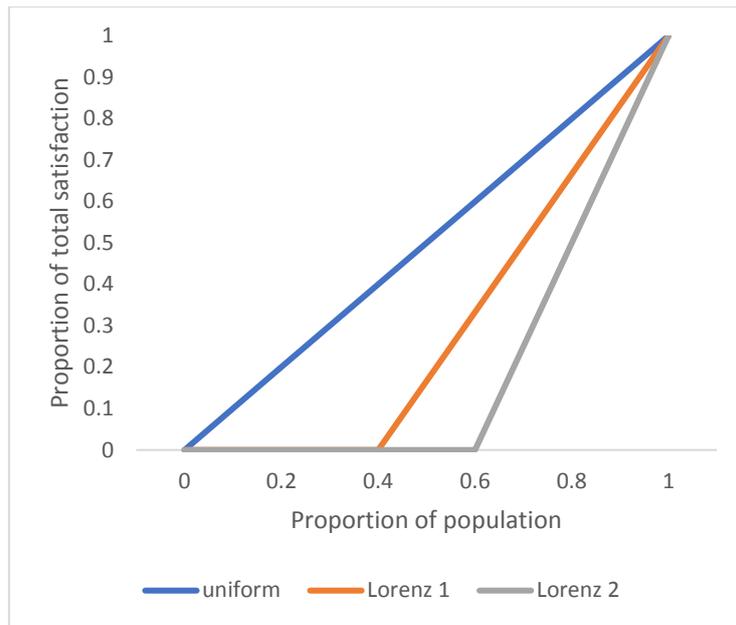


Figure 2: Lorenz curve corresponding to situation where winner of MR is elected by 60% of the population (Lorenz 1) and situation where the alternative is elected (Lorenz 2).

A few comments are in order:

--In these restrictive cases, MR results in the minimal level of post-election inequality. *Procedural equality and outcome-based equality go hand in hand.*

--The Rae-Taylor theorem (1969) specifies that under similar circumstances (EI), MR also maximizes aggregate satisfaction (i.e., it selects the alternative with the higher level of overall satisfaction). Thus, somewhat surprisingly, *equality and satisfaction maximization go hand in hand.*

4. Beyond Equal Intensity

EI rarely holds in practice. We consider a ‘satisfaction scale’ spanning from 0 to 1 where individuals can rank the two alternatives on the ballot. How ‘fine-grained’ this scale is will be something we explore, but we will for now consider the simple case of three possible intensity levels.

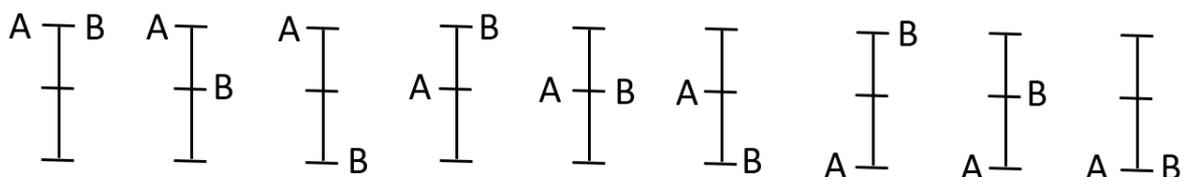


Figure 3: Nine possible voter profiles when ranking two alternatives (A and B).

Figure 3 shows nine possible individual profiles. This means a population consists of nine different ‘types’ of voters (one corresponding to each profile) and the ‘composition of a

population' refers to the particular proportion of types present in the population. In the limiting case involving an infinite population of voters, we uniformly sample the eight-dimensional space of possible population compositions. We then calculate average satisfaction and the level of satisfaction inequality associated with the MR winner. We use computer simulation to repeatedly do this as well as additionally compare MR to supermajoritarian-rule. Briefly, we find that even when EI is violated there is still a strong tendency for MR to select the alternative that minimizes inequality. Furthermore, MR does much more to promote both equality and the maximization of satisfaction than supermajoritarian voting rules.

5. Conclusion

This paper has taken some first steps toward developing a novel defence of MR. We've shown that in the limiting case (where EI holds) MR minimizes outcome inequality and is procedurally fair. MR also outperforms competitors (supermajority-rule) when EI is violated. Finally, we contend that democratic theorists should place less focus on the axioms that underlie various voting procedures and instead attend to the aggregate satisfaction and level of inequality associated with a voting system. Focusing on both axioms as well as these metrics allows theorists to engage in a kind of 'reflective equilibrium' that was previously unavailable to them.

6. References

- Risse, M. (2004). Arguing for majority rule. *Journal of Political Philosophy*.
- Saunders, B. (2010). Democracy, political equality, and majority rule. *Ethics*.
- Beisbart, C., Bovens, L. and S. Hartmann (2005). A utilitarian assessment of alternative decision rules in the Council of Ministers. *European Union Politics*.