Handout 4: Random Dictatorships, Lottocracy

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B. Saunders, Democracy, Political Equality, and Majority Rule

> Democracy: The decisions made by a group must be appropriately responsive to the expressed wishes of the members of that group.
>
> Political equality: Each group member must have an equal (chance of) influence over the group's decisions.
>
> Majority rule: The option that gets the most votes should be the group decision.

Since democracy, political equality, and majority rule are distinct ideas, each stands in need of separate justification. It is not, here, my intention to attack or defend any of them, though I aim to show that the last of these is rarely given adequate general justification.

Lottery voting: (This is what we have been calling a Randomized Dictatorship) each person casts a vote for their favored option but, rather than the option with most votes automatically winning, a single vote is randomly selected and that one determines the outcome.

- This procedure is democratic, since all members of the community have a chance to influence outcomes
- It is not majority rule, since the vote of someone in the minority may be picked.
- It is egalitarian, since all have an equal chance of being picked. It gives each voter an equal chance of being decisive, but voters do not have equal chances of getting their way—rather, the chance of each option winning is proportional to the number of votes it obtains.

This shows that democracy and political equality do not conceptually require majority rule. Moreover, I will argue that there are no clearly decisive general reasons to prefer majority rule to lottery voting in all cases.

A full defense of democracy is beyond the scope of this essay, and I cannot, here, adjudicate among these different arguments. My point is that none of them necessarily require either political equality or —as I will argue in the following two sections—majority rule.

Intrinsic Fairness and Majority Rule

1. democracy is an intrinsically just procedure or way of treating everyone fairly. It is unclear, though, whether majority rule always does treat all persons equally:
   - Some votes are worth more than others.
   - District sizes are greatly unequal.
   - One person's vote was more likely to be pivotal than another's, simply because of how others vote. This is easily seen if a bloc of voters always votes together, effectively becoming one person with a more-weighty vote. If we have nine people, each with one vote, and five always vote together, then they will always be a majority, so majority rule denies the other four any influence

2. It is generally agreed that majority rule is most defensible where society is divided by numerous cross-cutting cleavages, so that both majorities and minorities are fluid and changing. This means that those who win or lose on one decision have no grounds to assume that they will be in the same position on the next occasion, since they may find themselves in either a majority or a minority on any given issue.

3. A simple lottery (e.g., a uniform lottery) over options treats all citizens equally, giving all an equal expectation of getting their most preferred option (though actual levels of [dis]satisfaction may still be unequal). Such a lottery is obviously not democratic, however, since by assigning an equal probability to each possible outcome it disregards citizens' inputs altogether. A justification of democracy has to appeal to something beyond mere procedural fairness to explain this responsiveness.

4. We do not ordinarily think that the purpose of democracy is to realize the equal satisfaction of all groups.

   - Suppose that society is divided into two groups: economizers and aesthetes.
   - The economizers care only about material possessions and will sacrifice other values for the sake of efficiency. The aesthetes, conversely, value beauty and the environment and are willing to pay more to preserve these ideals.
   - Assume that three-quarters of the society are economizers, while one-quarter are aesthetes, and that they face regular trade-offs between economic efficiency and aesthetic values.
   - Predictably, a majority each time will favor the cheaper option, even at the cost of aesthetic values, but, if there are four such decisions, it hardly seems fair for them all to go the way of the economizers. Were we to toss a coin over each decision, however, or simply take it in turns to satisfy each group, then the aesthetes would expect to get their way on half of the decisions, which also seems unfair, since they are only a quarter of the population.
   - It seems that what fairness requires here is proportionality, rather than blindly enforcing equality regardless of differences. Ideally, this might be proportionality of outcomes but, where that cannot be satisfied, proportionality of chances may be the best approximation. Democracy is a matter of fair decision-making procedures, rather than whatever produces substantively fair outcomes. Matters are complicated by the fact that we have unequal numbers on each side of the dispute.

5. A similar case: Suppose that in we can save either one person's life or five other people's lives

   (a) Flip a coin giving each person a 50% chance of surviving

   (b) While tossing a coin may be a reasonable procedure between groups of equal size, the extra people in a larger group could reasonably reject a decision-making procedure that gave their presence no weight whatsoever and therefore concludes that one should save the greater number.

   (c) Another way of counting each person's claim to be rescued equally would be to hold a weighted lottery (so the second group has 5/6 chance of being rescued while the first group has a 1/6 chance of being rescued).

   The two cases are structurally similar: we can satisfy either of two distinct groups and it is agreed that it would be fair to toss a coin were the groups of equal size. The crucial issue is what fairness requires when these groups are unequal in size; the prominent possibilities being still to toss a coin (equal chances), to save the greater number (majority rule), or to hold a proportionally weighted lottery (proportional chances).

6. Democracy is a matter of rule by the people, not merely for the people. A lottery over votes treats each person fairly, by giving each of them an equal chance of being decisive.
   - It is not about equal satisfaction of preferences (as shown by the economizers and aesthetes example and our rejection of coin tossing), but equal respect for each person's agency.
   - Each person's vote must have equal influence over what is done. Lottery voting reflects this by giving each voter an equal chance of being decisive. It does not follow that voters will be equally satisfied, or even that they should expect to be so, for this would be undemocratic where the split of opinion is unequal.
   - Where our aim is to respect each person's input into decision making equally, however, a weighted lottery is one possibility. In fact, this solution seems more reasonable in most democratic cases than in the life saving case:
     (a) it seems more reasonable that neither alternative is impersonally worse (or, at least, that the option favored by the majority is necessarily likely to be better, given problems such as unequal preference intensities)
     (b) people want to be counted in the decision making, rather than simply to get their way.

7. Lottery voting may actually produce better outcomes than majority rule, at least in certain cases.
   (a) When there is a fixed majority/minority division, majority rule is likely to lead to the same people getting their way all of the time. While minorities may have their basic rights protected by constitutional provisions, this is not enough. Intuitive standards of outcome fairness require each group to get some satisfaction, but permanent minorities may never be satisfied. While lottery voting does not guarantee proportionality of outcomes, it makes it likely that, over enough decisions, each group will get its way at least some of the time. Proportionality of outcomes is unlikely under majority rule because, even if all members of the majority agree that the minority should sometimes get their way and are willing to vote with the minority for this reason, there is no method of coordinating such "defection" to ensure that the minority are sometimes in a majority.
   (b) If we assume that there may be a wise minority in society, on at least some issues, then allowing them to get their way and be proved right means that in future more people may defer to their judgment, making it more likely that future decisions will be right.
   (c) Lottery voting may do more to encourage deliberation, since one will always have an incentive to persuade as many voters as possible of the merits of one's case, and one may think that this will promote better outcomes.

8. A qualified defense of lottery voting in particular is only my secondary purpose. I do not need to show that it is the best democratic procedure, only that it has some plausibility in certain circumstances, to show that majority rule stands in need of (better) justification.

9. Problems with Lottery Voting:
   (a) can allow extreme or undesirable minorities to win;
      - The defender of lottery voting might reply that it would be democratic to give even these minorities a chance of having their policies enacted, if people vote for them. Democracy is not, after all, all good things but simply a system of popular rule and, if the people vote for injustices, then it is unsurprising that democratic outcomes may prove to be unjust.
      - It should be noted that although the logic of proportionality requires that all groups get the chance that they are entitled to, we might in practice choose to limit this proportionality by imposing some minimum threshold of votes before a group (or the option they support) receives any chance.
      - There is considerable evidence, both scientific and anecdotal, that much of the extremist voting we observe in such systems is simply protest voting....Most people do seem to consider the general good or justice, rather than merely their own private interests, when voting. Since lottery voting encourages personal responsibility among voters, we may hope that most will refrain from advancing extreme positions, while those we deem unjust may be checked by judicial review.

   (b) fails to live up to its promise of equality, because outcomes may still be unequal;
   (c) neglects the importance of deliberation; and
      - Suppose that the opinion was initially split 90/10 but, after deliberation, this became 60/40. Here we might think that the stronger arguments actually favor the minority, for they had clearly been more persuasive in the debate; but majority rule would not reflect this and would still have the former side win. Neither lottery voting nor majority rule guarantees that the side with the better arguments will get its way, but lottery voting at least ensures that the more people you persuade the greater your chances of victory.

   (d) may result in inconsistent sets of decisions.
      - Even if lottery voting is no worse than majority rule in deciding particular issues, one may worry that the overall package of decisions that results will be worse, since different factions may get their way each time and hence the result may be an inconsistent patchwork with no coherent rationale.
      - Similar problems arise with majority voting: See the work on Judgement Aggregation.

A. Guerroro, Lottocracy

The problem with representative systems

(P1) Systems of electoral representation tend to bring about outcomes that are responsive to the preferences of some constituency, C, with respect to some problem, P, only if C can hold their representative(s) meaningfully accountable with respect to P.

(P2) Systems of electoral representation tend to bring about good outcomes with respect to some problem, P, only if the political constituency, C, can hold their representative(s) meaningfully accountable with respect to P.

(P3) The presence of widespread issue, conduct, or evaluative ignorance within a constituency, C, with respect to some issue, P, undermines the ability of members of C to hold their representative(s) meaningfully accountable with respect to P.

(P4) If a political problem is information intensive—(a) factually complex (requiring extensive knowledge of information in order to understand the problem) or (b) technical (requiring advanced education or experience to understand and evaluate possible solutions)then there will typically be widespread issue, conduct, or evaluative ignorance with respect to that problem.

(P5) Many political problems in modern political societies are information intensive.

(SC1/P6) If a political problem is information intensive, then meaningful accountability with respect to that problem will be undermined.

(SC2/P7) If a political problem is information intensive, then systems of electoral representation will not tend to bring about responsive outcomes with respect to that problem, nor will systems of electoral representation tend to bring about good outcomes with respect to that problem.

(C) Therefore, for many political problems, systems of electoral representation will not tend to bring about responsive or good outcomes with respect to those problems.

((SC1/P6) follows from (P3) and (P4). (SC2/P7) follows from (P1), (P2), and (SC1). And (C) follows from (P5) and (SC2/P7).)

The difficulty of improvement

Principals and Agents: some small number of Xs are chosen by a much larger number of Ys, and the Xs are to act on behalf of, or for the sake of, the Ys.

Electoral Accountability: the mechanism that is to ensure or make likely that the Xs act on behalf of the Ys is twofold: (a) initial election/ selection by the Ys and (b) potential for reelection/selection by the Ys after some period of time.

Complexity: many political problems are complex, technical, and information intensive in a way that renders it difficult for Ys to have informed beliefs and preferences about those problems, given their limited time and knowledge.

Opacity: whether the Xs are or have (a) actually acted or (b) tried to act to the benefit of the Ys is not obvious to the Ys in the short term (the time between election cycles).

Significance: what the Xs do has great significance in terms of regulating (or not) the powerful members of a society.

Open Influence: there are plausible norms that require restrictions on how much regulation of political speech and influence from one Y to another there can be, regardless of the relative power or resources of the individuals.

Inequality: there is massive inequality in terms of money and power among the Ys.

The Lottocratic alternative

1. The legislative function is fulfilled by many different singleissue legislatures (each one focusing just on, for example, Agriculture or Health Care), rather than by a single, generalist legislature;
2. The members of these single-issue legislatures are chosen by lottery from the relevant political jurisdiction; and
3. The members of the single-issue legislatures hear from a variety of experts on the relevant topic at the beginning of each legislative session.

- Each of these single-issue legislatures consists of three hundred people, chosen via random lottery from the adult citizens of the jurisdiction.
- Each person chosen would serve for a three-year term.
- Terms would be staggered so that each year one hundred new people are chosen, and one hundred people finish their terms.
- All adult citizens in the political jurisdiction would be eligible to be selected.
- People would not be legally required to serve if selected, but the financial incentives would be considerable, efforts would be made to accommodate family and work schedules (including providing relocation expenses and legal protections so that individuals or their families are not penalized professionally for serving), and the civic culture might need to be developed so that (unlike jury duty) serving is seen as one of the most significant civic duties and honors.
- There should be some mechanism of removing people for bad behavior—failing to attend meetings, speaking out of turn, showing up intoxicated or otherwise incapable of participating fully—but this mechanism should be structured so as to protect those who simply are unlikable or who have divergent views.
- Each single-issue lottery-selected legislature (SILL) would meet for two legislative sessions each calendar year, and the structure for each session would be something like this: agenda setting, learning phase with expert presentations, community consultation, deliberation/discussion, drafting, revising, and voting.

How are the panels chosen?

B. Flanigan, P. Gölz, A. Gupta, B. Hennig, and A. Procaccia, Fair algorithms for selecting citizens' assemblies, Nature 2021, `https://doi.org/10.1038/s41586-021-03788-6`

Ideally, a citizens' assembly selected using sortition acts as a microcosm of society: its participants are representative of the population, and thus its deliberation simulates the entire population convening 'under conditions where it can really consider competing arguments and get its questions answered from different points of view'.

Panel selection is generally done in two stages:

1. thousands of randomly chosen constituents are invited to participate, a subset of whom opt into a 'pool' of volunteers.

2. A panel of prespecified size is randomly chosen from this pool using some fixed procedure, which we term a 'selection algorithm'. As the final and most complex component of the selection process, the selection algorithm has great power in deciding who will be chosen to represent the population.

   - the pool tends to overrepresent groups with members who are on average more likely to accept an invitation to participate, such as the group 'college graduates'.
   - to ensure descriptive representation despite the biases of the pool, selection algorithms require that the panels they output satisfy upper and lower 'quotas' on a set of specified features, which are roughly proportional to the population rate of each feature (for example, quotas might require that a 40-person panel contain between 19 and 21 women).
   - Selection algorithms to date have focused on satisfying quotas, leaving unaddressed a second property that is also central to sortition: that all individuals should have an equal chance of being chosen for the panel.
     - However, these practitioners face the fundamental hurdle that, in practice, the quotas almost always necessitate selecting people with somewhat unequal probabilities, as individuals from groups that are underrepresented in the pool must be chosen with disproportionately high probabilities to satisfy the quotas.

3. Current algorithms in use all have the same high-level structure: they select individuals for the panel one-by-one, and in each step randomly choose whom to add next from among those who—according to a myopic heuristic—seem unlikely to produce a quota violation later.

4. **Example**

	female	male	young	old
lower quota	1	1	2	1
upper quota	2	2	2	1

name	features
Alice	young, female
Bob	old, male
Ciara	young, female
Dan	young, male
Ella	old, female

$$\mathscr{P} = \{\{\text{Alice, Bob, Ciara}\}, \{\text{Alice, Bob, Dan}\}, \{\text{Ciara, Bob, Dan}\},$$
$$\{\text{Alice, Dan, Ella}\}, \{\text{Ciara, Dan, Ella}\}\}$$

Legacy

Output Distribution	*Probability Allocation*
$\mathbb{P}[\{\text{Alice, Bob, Ciara}\}\text{ selected}] = \frac{1}{6}$	Alice: $\frac{1}{6} + \frac{1}{4} + \frac{1}{6} = \frac{7}{12}$
$\mathbb{P}[\{\text{Alice, Bob, Dan}\}\text{ selected}] = \frac{1}{4}$	Bob: $\frac{1}{6} + \frac{1}{4} + \frac{1}{4} = \frac{2}{3}$
$\mathbb{P}[\{\text{Ciara, Bob, Dan}\}\text{ selected}] = \frac{1}{4}$	Ciara: $\frac{1}{6} + \frac{1}{4} + \frac{1}{6} = \frac{7}{12}$
$\mathbb{P}[\{\text{Alice, Dan, Ella}\}\text{ selected}] = \frac{1}{6}$	Dan: $\frac{1}{4} + \frac{1}{4} + \frac{1}{6} + \frac{1}{6} = \frac{1}{2}$
$\mathbb{P}[\{\text{Ciara, Dan, Ella}\}\text{ selected}] = \frac{1}{6}$	Ella: $\frac{1}{6} + \frac{1}{6} = \frac{1}{3}$

LexiMin

Output Distribution	*Probability Allocation*
$\mathbb{P}[\{\text{Alice, Bob, Ciara}\}\text{ selected}] = \frac{1}{3}$	Alice: $\frac{1}{3} + \frac{1}{12} + \frac{1}{4} = \frac{2}{3}$
$\mathbb{P}[\{\text{Alice, Bob, Dan}\}\text{ selected}] = \frac{1}{12}$	Bob: $\frac{1}{3} + \frac{1}{12} + \frac{1}{12} = \frac{1}{2}$
$\mathbb{P}[\{\text{Ciara, Bob, Dan}\}\text{ selected}] = \frac{1}{12}$	Ciara: $\frac{1}{3} + \frac{1}{12} + \frac{1}{4} = \frac{2}{3}$
$\mathbb{P}[\{\text{Alice, Dan, Ella}\}\text{ selected}] = \frac{1}{4}$	Dan: $\frac{1}{12} + \frac{1}{12} + \frac{1}{4} + \frac{1}{4} = \frac{2}{3}$
$\mathbb{P}[\{\text{Ciara, Dan, Ella}\}\text{ selected}] = \frac{1}{4}$	Ella: $\frac{1}{4} + \frac{1}{4} = \frac{1}{2}$

Theorem 1 For a given set of agents, panel size, and set of features with associated quotas, it is **NP**-hard to decide whether there exists a panel.

Proposition 1 Fix an arbitrary instance and a fairness measure F for this instance. If there exists any maximally fair distribution over panels for F, there exists a maximally fair output distribution whose support includes at most $n + 1$ panels.

5. The proposed algorithms (1) explicitly compute a maximally fair output distribution and then (2) sample from that distribution to select the final panel.