

Political ignorance and liquid democracy: A partial solution?

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Abstract

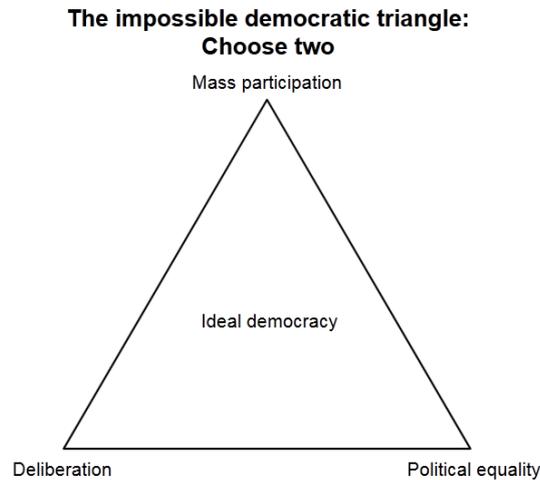
Political ignorance poses a problem for democracies. If voters are mostly ignorant of politics, how can they be relied upon to elect competent politicians? Recent discussions have been about the extent of voter political ignorance, methods to increasing political knowledge, and policy recommendations given political ignorance. In this paper we instead propose that using liquid democracy can somewhat alleviate the problem. Model simulations on the system show if voters who delegate their votes tend to be the most politically ignorant and if voters tend to delegate their votes to someone more knowledgeable than themselves, then the political knowledge of the direct voters will increase dramatically.

1 Introduction

Recently two books have been published in which the authors argue that political ignorance is widespread, not likely to go away any time soon, rational and is a problem for democracies [1, 2]. Plainly put, if voters are ignorant of even basic facts about how the political system works, what candidates think, how the economy is, etc., how can they in any way be expected to vote for competent politicians? Indeed, both authors view this problem as the reason *why* democracies do so poorly.

Various solutions have been offered to this problem. Fishkin[p. 46][3] thinks that there is a democratic trilemma. It is based on an impossible triangle, where there are three attractive properties of the system, but only two of them can be had, see Figure 1. Fishkin favors the combination of deliberation and political equality and wishes to sacrifice mass participation. The idea is to gather a random, representative sample of citizens, have them deliberate on an issue, let them vote, and then use the results of this for the population where the same is from.

Figure 1. The impossible democratic triangle.



2 Liquid democracy

Liquid democracy is a system that combines direct and indirect democracy (For a short video introduction see [4]). For each issue, a voter may choose to vote himself or delegate his vote to someone else who can then vote for him or delegate it again. This fluid alternation between direct and indirect democracy gives name to the system. This delegation can happen multiple times.

3 Political ignorance and liquid democracy

The connection between the two can now be explained. The idea is based on two propositions:

1. The less knowledgeable voters tend to delegate their votes and the more knowledgeable ones don't (i.e. there is a correlation between political knowledge and non-delegation).
2. Voters tend to delegate their votes to someone more knowledgeable than themselves (i.e. there is a correlation between being a delegation target and political knowledge).

If both (1) and (2) holds, then the result is that the average political knowledge of the direct voters (who have all the voting power), is higher than the average of all voters. How much higher depends on the actual behavior. Below we explore a variety of models and their results based on simulations.

4 Models

A very simple model of the system is this:

- The voter population is normally distributed in political knowledge (PK) with a mean of 0 and SD of 1.

- The chance that a voter will delegate his vote is $1-\text{CDF}(\text{PK})$, where CDF is the cumulative distribution function.
- If a voter delegates his vote, he delegates it to a random person with a higher PK than himself.

For all models, we simulated it with different population sizes (beginning with 2). We ran the simulations at least hundred times to reduce sampling error.

Alternative parameters that were tried:

- Model 2. If a voter delegates his vote, he delegates it to a random person with at least 0.5 higher than himself.

This is meant to reflect the plausible scenario that people won't delegate their votes to someone who is not noticeably more knowledgeable than them, and setting the noticeability threshold at 0.5.

- Model 3. If a voter delegates his vote, he delegates it to a random person with at least 0.5 higher but not above 1.5 above himself.

This is meant capture that voters might be blind to the ability differences between people who are very much above his own level. Consider, by analogy, the inability of chess novices to perceive the differences in skill levels between chess grandmasters.

4.1 Discussion of the assumptions

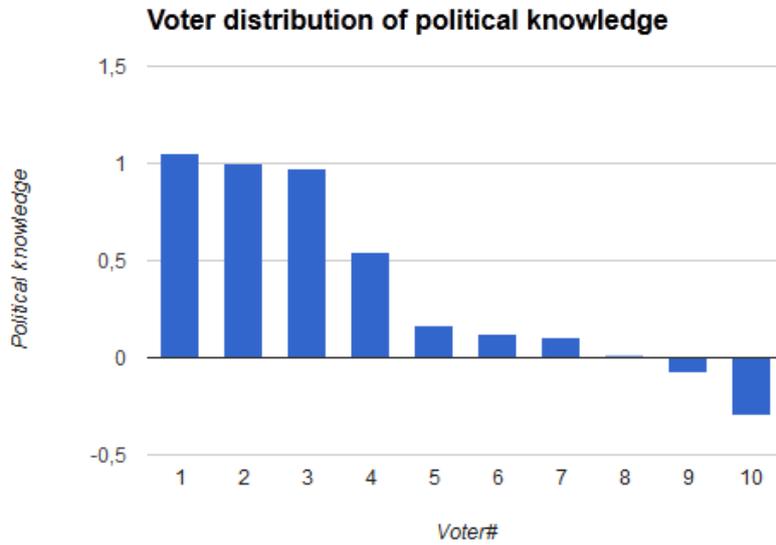
(1) can be ascertained from previous studies of political knowledge. If political knowledge is mostly a function of general intelligence (psychometric g see [5] and see [6] for a study of g 's influence on PK) and interest in politics, and given that g is approximately normally distributed and interest in politics is highly skewed, we expect the distribution of PK to be somewhat skewed towards zero knowledge.

(2 and 3) will need new empirical studies to find their approximate values.

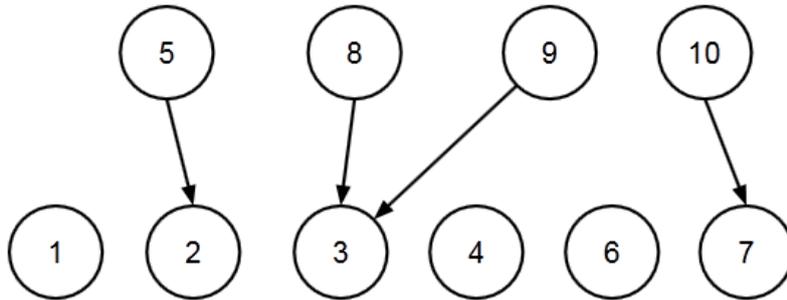
The point is not that the assumptions are true or even approximately true, but they are in the right direction.

5 An example

Given the above model, one run with population size $(N) = 10$ could give something like this:



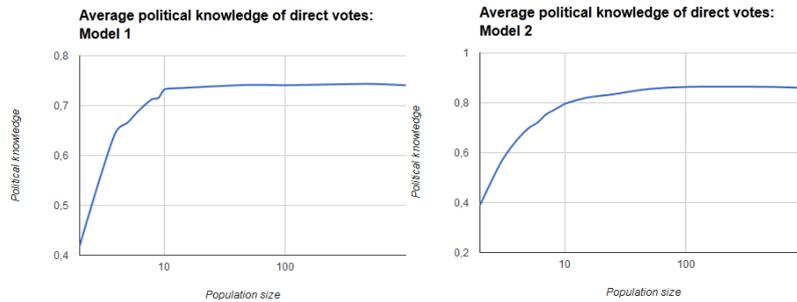
As can be seen, this sample is relatively high in PK (average 0.36). Running the simulation with the assumptions above might give this delegation structure:



4 voters decide to delegate their votes. Calculating the average PK of the direct voters and weighing by PK gives 0.69, an increase of about 0.33 from before.

6 Results

Results are shown below.



As can be seen, the performance of the models quickly reach their maximum efficiency, Model 1 at about $N=10$, and Model 2 at about $N=100$.

7 Discussion

It is clear that if the two theoretical propositions hold, then the political knowledge of the direct voters will increase. The question is whether this increase will be practically significant so as to somewhat alleviate the problem of political ignorance, or whether it will be too small. If one of the two propositions are not true, the system might backfire and result in even worse results than the current representational democratic systems. Even if both propositions hold the system can still have net negative effects of it gives rise to other problems.

None of the assumptions used by the models are likely to be true or even close to true. They can only be said to be in the right direction. Future studies should attempt to create more realistic models and preferably simulate liquid democracy systems with actual voters in a general population sample.

All the code (python) is available at http://emilkirkegaard.dk/liquid_demo_simul.

References

- [1] Bryan Caplan. *The myth of the rational voter: Why democracies choose bad policies (New Edition)*. Princeton University Press, 2011.
- [2] Ilya Somin. *Democracy and Political Ignorance: Why Smaller Government is Smarter*. Stanford University Press, 2013.
- [3] James Fishkin. *When the people speak: Deliberative democracy and public consultation*. Oxford University Press, 2009.
- [4] Jakob Jochmann. Liquid democracy in simple terms, 2012.
- [5] Arthur Robert Jensen. *The g factor: The science of mental ability*. Praeger Westport, CT, 1998.
- [6] Bryan Caplan and Stephen C Miller. Intelligence makes people think like economists: Evidence from the general social survey. *Intelligence*, 38(6):636–647, 2010.