Democracy by random selection

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Abstract *We propose a non-political parliamentary system where the parliamentarians are randomly chosen from the public, using computer technology, and there are no elections. In this 'random parliament', government is by ordinary people with proportional representation by all groups including women, men, workers, managers, old people, young people, and so on. The random parliament is the closest thing to true democracy that is currently attainable. Local government may be a suitable place to trial the idea of random representation.*

Introduction

In ancient Greek democracies[1], women and slaves were disfranchised, but all other citizens could become involved in all aspects of government. This system became unmanageable when the population of the ancient cities and their rural surroundings became too large. A system where officials of government were chosen by lot, was later used in Sparta, where an assembly of citizens (the 'ephors') was chosen to oversee the powers of the king. As far as we can ascertain the present representative electoral system was never used by the ancient Greeks yet we frequently refer to this period as the root of our own 'democracy'.

Contrary to popular belief the present representative electoral system is not really democratic or fair. In the present system we are essentially represented by only a few political groups. In an ideal democracy a country would be governed by all of its citizens, and there would be virtually no politics. Realistically, this situation is unattainable[2], but a very close approximation to this state can be achieved by randomly selecting the governing body from the public by what virtually amounts to a giant lottery. In this 'random parliament' [3], ordinary citizens are chosen to be parliamentarians[4] from a large population database using random number generators and computer technology, and there are no elections.

Similar ideas based on statistical representation have been advanced by Burnheim[5]. Burnheim however suggests that certain selection criteria should apply, and citizens

should be assessed by questionnaires for suitability. This system is however not truly democratic and one wonders who would prepare and analyse these questionnaires. Burnheim further suggests that the formulae by which representatives are selected can be challenged before a tribunal, but this then gives unfair advantage to powerful and rich individuals and corporations. Such a system would also not be practical in primitive and undeveloped countries where the need for democracy is arguably the greatest. Unlike Burnheim we believe that in a fundamental democracy all citizens should have an equal probability to be selected. Even people with a criminal record for example should not be excluded from the process[6] a priori. As a safeguard it may however be desirable to give the random parliament the option to collectively dismiss an inappropriate member. In addition to these differences with Burnheim's proposal we explicitly suggest how a random parliament can be implemented and how it can be maintained as a workable government, even with the selection of ordinary apparently untrained citizens.

Margolis[7] has previously suggested how computers can be used to allow citizens to freely access information in government departments and contribute to discussion, but this 'viable democracy' does not invest any real power with citizens in the actual decision making process. Others have suggested[8] that continuous referenda can be applied through computer or telephone networks to take into consideration the public view[9], but politicians can presumably ignore such advice or may not call for a referendum. More democratic versions of these proposals where the opinion of citizens cannot be ignored are likely to be unworkable since it would be difficult for all ordinary citizens to be involved, to properly assess information and to obtain expert advice before making informed decisions. There are also distinct advantages in private discussions by smaller working groups. It would seem that there may be a natural upper limit to the size of a parliament[2]. For this reason we suggest that the random parliament may be the closest thing to true democracy that is attainable in a large population.

Problems associated with the present electoral and political system
Our discussion below is illustrated by reference to the Australian political system because we are most familiar with this system.

In the present political system, the winner in an electorate receives all of the spoils of victory, namely the parliamentary seat, and the losers receive absolutely nothing, no matter how close they may come to victory. This situation also applies to the entire federal election where the winning party gets to form government and the losers get practically no power. It is interesting to note that in this system almost half of the population is generally in opposition.

In many modern 'democracies', including Australia, two main political parties dominate government. In essence the will and desires of these political groups, which generally represent the trade unions and the employers, is imposed on the majority. The power is

not equally and proportionally distributed to all community groups. Smaller groups are generally swamped by the larger groups and receive no power or representation in government. The voter is effectively only presented with a choice between the two main political candidates/parties. In a fair system the smaller political parties should receive representation in the parliament in proportion to the number of votes they have secure in an election. In Australia the preferential voting system[10] almost guarantees that the smaller parties receive no representation in the legislative house of parliament.

It is also apparent that the present parliament predominantly consists of older and generally quite prosperous men. There is not a proportional representation of woman, young people, or those from a lower socioeconomic class for instance. In the random parliament the power is proportionally distributed to all groups.

In the present system almost all politicians are in debt to their party because the party funded their election campaign. They are obliged to toe the party line or they may not be preselected for candidacy in the next election. Party loyalty is generally rewarded in this system. In the random parliament the parliamentarians will be free to vote according to their own conscience. By the same token, political parties are themselves obliged to favour the organisations and individuals that have financially supported their election campaigns. These problems do not occur in the random parliament since there are no elections.

Political debate in the parliament is generally unresourceful. Politicians tend to argue the position of their party and oppose their opposition simply for the sake of argument. In many respects the parliament is nothing more than a theatrical performance for the media, which portrays a public image of the political parties.

One of the main problems with the present electoral system stems from the fact that the marginal winner receives all of the spoils of victory. In many countries it is almost impossible to hold fair elections, because of the problems associated with distances, coordination, interference and vote rigging. This can lead to civil conflict since the losers may find it difficult to accept the result of an election. This is especially significant since a small shift in the votes can completely reverse the result of the election. The inherent instability of the electoral system heightens suspicion and each side remains in fear that the other side may dominate them at the next election. Minority or ethnic groups are also unrepresented or under represented in this type of system. As is frequently observed, elections rarely lead to lasting peace. These problems can only be eliminated by introducing a non-political system, such as the random parliament.

In the random parliament there is no single winner and all groups (workers, managers, peasants, ethnics, and so on) are proportionally and fairly represented. The non-political nature of the system and the fair distribution of power to all groups should also eventually

quash political ideology. Admittedly it may be difficult to initially generate databases of citizens in some of these countries, to implement the random parliament, but once this has been established it should be relatively easy to maintain. Note that the electoral system also requires a population database. The United Nations could monitor the implementation of random selection systems.

The random parliament
Under our proposal, the members of parliament are chosen randomly from the public. Every eligible citizen (over some specified age) is assigned a number and if this number is chosen by a computer program that person will be selected (as opposed to elected) to represent the country in parliament. Every person is equally likely to be selected and hence all groups in the community are proportionally represented in the new parliament. Just how this selection process can be implemented is discussed in more detail below. In some respects this system is like jury service or a giant lottery. The option for a selectee to decline an invitation to join parliament should be included.

In the random parliament there will be a proportional representation of all community groups, including women, men, workers, managers, farmers, young people, old people, middle-age people, poor people, rich people, middle-class people, aborigines, immigrants, and so on. The more even distribution of power to the public should result in a much fairer society for all groups. The random parliament is of the people, by the people and for the people. The system is as fair and as democratic as can possibly be achieved at present.

The random parliament makes no sociological assumptions, and in that respect can work equally well under capitalism, socialism or communism.

In the random parliament proposal there are no elections. This itself represents an enormous saving to the community, not to mention the constant work required to shift electoral boundaries to ensure the 'pseudo-equity' of each vote, and the possibility of corruption in the present political system. In the random parliament all communities and townships are proportionally represented in the parliament. The larger their population, the larger the probability that they will have a representative in parliament. It should also be noted that many politicians do not even live or work in their own electorates.

In the random parliament proposal there is no need for parliamentarians to receive large salaries, since parliamentarians are randomly chosen from the public and there is no need to encourage people to choose politics as a professional career.

Once a random parliament has been formed with say 1000 parliamentarians, they could be replaced on a semi-continuous basis. An average term of office of approximately four years can be achieved by deselecting 20 parliamentarians every month and replacing them

with 20 new people randomly chosen from the public. The term of office for each selectee can vary. Someone may be so unlucky to be in parliament for only one month, while others may remain in parliament for well over four years. The uncertainty in the term of office would reduce the likelihood of corruption and bribery since any parliamentarian may be deselected in the next month. The gradual replacement of parliamentarians also ensures that there are always people in parliament with experience in government.

The random parliament can be implemented by initially incorporating it with the present elected parliament. This can be achieved by allowing the selected parliamentarians to join the present parliament, followed by the process of deselection and selection as outlined above. This should ensure a smooth transition from the present system to the new random parliament.

Once the random parliament has been chosen, the parliament can then itself elect its president (or chairperson) and the ministers (say around 30 people in all) who will be more directly involved with the running of the country. Parliamentarians could nominate themselves for such positions and could present their qualifications to the parliament. Ministers will be directly responsible to the parliament as a whole. There is no reason why one should not expect to find at least 30 very capable and talented people in the 1000 selected parliamentarians who could competently manage these tasks. In the present system the appointment of ministers is not based on merit, but on party political grounds. Appointed ministers generally have no expertise or experience in their respective areas. Demographics in Australia reveal that about 2 percent of the population is for example involved with health occupations, which means that on average in a 1000 strong random parliament there would be 20 people with experience in the health profession, who may apply for the health portfolio. The other members of the random parliament who are not ministers can vote on new legislation and can themselves propose legislation either individually or through self-appointed working groups. Another interesting possibility is to replace the traditional role of ministers by elected committees.

Since the random parliament will no longer be indulgent in political point scoring, parliament sitting can be used more resourcefully to properly and openly discuss important issues with all members. The traditional public service and bureaucracy would remain in our proposed random parliament, so that parliamentarians can seek professional and expert advice before making decisions. In the random parliament, politically motivated people may still influence policy by joining the public service or by becoming advisers, but at least the final decisions will not be politically motivated. If desired, the random parliament can scrutinize the appointment of senior public servants, but in our view this may not be necessary, since the drive for politics may be a direct result of the present system which encourages political aspirations.

To safeguard the parliament against the selection of undesirable citizens, rules may be incorporated so that people with a criminal record are ineligible, although in the spirit of true democracy we do not advocate this. It may be desirable however to have a mechanism whereby in a large majority the parliament (say 90%) can expel, if necessary, a parliamentarian who is unsuitable or who is found to have acted improperly.

In essence, the 1000 parliamentarians can be thought of as a statistical sample of the general public. Assuming a normal distribution, the standard deviation with such a sample is given by $\sigma = \sqrt{1000 \, p(1-p)}$, where p is the actual or estimated proportion of the public in favour of a particular decision. The standard deviation is maximized when p=0.5, so $\sigma \leq 16$. Consequently, any decision arrived at by the random parliament is accurate to 2.6 percent (1.645 standard deviations) with a 90 percent confidence level, or 3.1 percent (1.96 standard deviations) with a 95 percent confidence level. In other words if more than 530 of the parliamentarians vote for a particular issue this should also safely reflect the general view of the public. It may be prudent however to insist on a safe majority in the parliament (of say 60%) before any new law or act is passed, not only to insure against statistical fluctuations but also to guarantee that any decision reached by the random parliament is not unpopular.

An interesting feature of our proposed random parliament is that all parliamentarians will be on the same side, working together towards the unified principle of governing the country in the best interests of all. The parliament will not be split into two opposing halves as in the present system, where in most cases each side takes the opposing view just for the sack of argument. In the present system not only is half of the talent languishing in the opposition but it is obsessed with hindering the talent in government. This is not a productive system. In the random parliament the talent of every parliamentarian will be utilized in a collective and creative manner. The random parliament will be able to discuss issues openly without the need to hide the truth from the opposition.

Ordinary citizens are more aware of the problems that affect average Australians. Politicians, on the other hand, are generally of the same mould, and keep in touch with reality by obtaining information through popular polls. Since the random parliamentarians will have experience in other professions, the random parliament will have a greater diversity. Also since the random parliament is constantly changing, this will allow for a more dynamic opinion to evolve in the parliament.

It is expected that the two main political parties in Australia, the trade unions and business groups will bitterly oppose the random parliament proposal since it completely erodes their power base and the inequity they are enjoying under the present system. Political groups may argue that the random parliamentary system may select uneducated

or unintelligent citizens. In our view, these people also have a democratic right to be represented in parliament.

One may also apply random selection to local government, which may be an ideal place to trial these ideas. If society trusts twelve good men and women to serve as a jury in serious criminal trials, there is a strong argument that we can do the same with much simpler matters such as the zoning of land. Random selection in local government will eliminate many people who run for such office for selfish and corrupt reasons and will eliminate the use of local government as a training ground for aspiring politicians.

Critics of the random parliament proposal may suggest that the present parliamentary system is more stable since the government is guaranteed power for a fixed term in office of 3 or 4 years in which time they can implement their policies. However, one should bear in mind that the other political party is constantly opposing the implementation of these policies and when they come to power they generally undo most of the policies of their opponents and start to implement their own, only to have them in turn unravelled by their opponents later. In the random parliament everyone is on the same side, and there is a collective stability in the system.

The role of computers
The feasibility of our proposal rests on the ability of computers to be able to handle large databases and to be able to generate genuine random numbers. The question of security is also quite important.

With recent advances in hard-disk technology storage capacity is not really an issue. At first sight, it is difficult to imagine how computers can generate truly random numbers since they involve deterministic algorithms, but there are a number of ways to circumvent this. One could couple a computer algorithm with a system that is quite genuinely random, such as a quantum mechanical device, or a biological, physical or neural system that is beyond our present understanding and is for all intense and purposes random. We will argue, however, that there is no need to resort to nature to provide us with randomness, so long as the algorithm cannot be determined or exploited.

In computers, random numbers are generated by running a program where an initial number (referred to as a seed) is used to generate another number by a specific rule or algorithm. The new number is then used as a seed to generate the next number and so on and so forth. The numbers generated in this way can be arranged to uniformly cover any range of numbers, say from 1 to 10 million, if it is to be used to select the random parliamentarians from a total of 10 million eligible citizens. There are many different possible algorithms.

The simplest way to implement a random number generator is to use a very powerful computer, which may be continually running the random number program. Every now and again, at semi-regular intervals the current random number can be drawn from the computer and this can be used to select or deselect a random parliamentarian. A computer generally performs tens of millions of operation each second and in only a few seconds every eligible citizen is cycled through by the computer. A slight shift in the precise moment when a random number is drawn from the computer will lead to a completely different selection. Even if someone knew the algorithm that was used it would be difficult, if not impossible, to predict the random number that would be selected from the computer. The algorithm used by the selection computer could also be randomly changed or chaotic imperfections in the design of the computer may be included so that the calculations are not performed at a fixed rate. The deselection of parliamentarians can also be done by a more simple lottery system.

Many protective measures can be taken to secure the random number selection system. If for any reason the public remains unconvinced about the complete fairness in using computers or does not trust computers (probably because they are programmed by humans), there is an alternative. If every individual is assigned a number from 1 to 10 million then the parliamentarians can be selected by seven groups of ten "lotto" balls. The selection of one lotto ball from each group can be used as a sequence to generate a seven digit number.

Another interesting proposal to consider is where the present elected parliament is supplemented by ordinary citizens chosen by the random selection process. Another possibility is to replace the so called Upper House or Senate in Australia by a random parliament which oversees the powers of the political parliament in much the same way as the ephors did in ancient Sparta. Although this is not truly democratic it does at least add a democratic dimension to the process of government and may be a suitable compromise in an attempt to persuade the main political parties to consider proposals along the lines suggested here.

References
1.   Bertrand Russell, **History of Western Philosophy: and its connection with political and social circumstances from the earliest times to the present day**, second edition, George Allen and Unwin (London 1961).
2. J.J. Rousseau, **The social contract**, originally published in 1762, translated by M. Cranston, Pengiun Books (London 1968)
3. G.A. Christos, **In search of democracy**, Curtin Gazette, Vol. 7, No. 1, 1994,   pp 22-24.
4. In what follows we will reserve the name 'politician' to refer to a parliamentarian   in the present political system.
5. J. Burnheim, **Is democracy possible?**, Polity Press (London 1985).

6. In recent times numerous politicians have been convicted and jailed in   Australia.   In this respect the present system is not without its criminal   element.   One may also argue that politicians are generally power hunger   and hence more corruptible than others.

7. M. Margolis, **Viable democracy**, St. Martins Press (New York 1979).

8. We thank G. Maddox for informing us about these proposals.

9.   In some respects this is indirectly taken into account in the present system through media feed-back.

10. In the preferential voting system the candidate with the least number of votes   is eliminated and his/her preferences are distributed to the other remaining   candidates. This process is repeated until one of the candidates has more   than half of the legitimate votes.