

REPRESENTATIVE DEMOCRACY VIA RANDOM SELECTION

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It has been generally accepted in political science literature that no matter the advantages of full participatory (town meeting) democracy, for a large polity, such as almost any country, this form of government is not feasible. Hence, on purely technical grounds the closest that a country like the United States could come to a pure democracy would be representative government of some form. In a recent article in this *Journal* [12], James C. Miller, III, pointed out that given present rates of technological advance, it may not be long before this technical constraint will not be binding for rich countries such as the United States, at least in the sense of conducting national referenda.¹ Miller proposes to employ referenda along with "proxy politicians," whose function is to represent blocs of voters on issues and to be subject to instant recall by them, as an alternative to present forms of representation. The goal of such a reform is to give primary control over democratic process to the voters.

In a subsequent paper [23] Martin Shubik questioned the desirability of Miller's proposal on the grounds that there is a wide disparity in the information possessed by various types of voters. Shubik's argument turns on a fear of getting "uninformed" choices in national referenda from a wide cross-section of voters and is closely related to the classic problems of obtaining adequate debate before voting or collecting opinions in a poll.² Shubik raised the correct issue because, if anything, the average complexity of public issues has increased over the same period that the technical capacity to conduct large referenda has been developed. The time costs of having the general public cast votes based on reasonable levels of information is still high, if not higher than in earlier periods. Thus, one could argue that the case for delegating authority to "experts" has increased. In this paper we extend the thrust of Shubik's argument to discuss how one can combine the advantages of collecting decentralized information through polling with the efficiency of representation and suggest a system of representation that we feel would yield a better mix of efficiency and information than either the present, geographic-based national legislature or Miller's referenda system.

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¹For the mention of a similar proposal, see [20, p. 84] and the reference cited there. Also, for a general discussion of public policy toward emerging communications technology, see [17].

²See, for example, the discussion in [4].

I.

Proposals for holding a national town meeting via computer technology to obtain actual choices under some voting rule or to obtain advisory opinions on certain issues are open to objection on several grounds. To the pure elitist some people may be wiser, more intelligent, more moral, and so on. Hence, these persons "should" lead. However, even to one who wants to follow a form of democratic procedure, there will remain certain specialized or technical knowledge required for representation, and some members of the society may be more experienced in the "ways of government" (e.g., parliamentary procedure), perhaps due to professional necessity as in the case of the lawyer. Finally, and importantly, it is tremendously costly for everyone to become generally informed and to listen to the argument of experts, and where there is a need for quick legislative action, this problem would be compounded. Advanced technology helps reduce these problems by lowering the money cost and increasing the speed and ease with which information could be received by the polity and their votes registered. But short of major advances in the efficiency with which individuals can absorb information, the value of the time the polity would have to expend in becoming reasonably well informed on political issues would remain staggering.³ In essence, the principle of the division of labor implies that some degree of representation will generally be efficient, and all the reasons for representation that we have discussed here are variants of this principle.⁴

The reason that this elementary view of representation is important in the case of national referenda is because of the information possessed by the various individual voters. Political representatives who specialize in political activity will probably have more and a different mix of information on public issues than their constituents. One might argue in this case that the representative ought to educate his constituents, or distribute the different information that he has to them. Nonetheless, a difference in the information possessed by the representative and by his constituents seems inevitable in a system of political specialization.⁵

³Of course, in calculating the cost of becoming informed, one should exclude the time spent talking politics and the like, which individuals expend directly for its enjoyment value. On the money or economic value of time see [1] and [22], and the references cited in these papers.

⁴The sense in which we speak of efficiency here is that it is very costly for voters to become informed, and the gains over present forms of representation from having a political system where the responsibility for making informed decisions rests with the voters are probably nil. Also, the gains in terms of more accurate reflection of the underlying array of preferences of the polity are probably very slight.

⁵Miller seeks to avoid this problem, as previously noted, by having so-called proxy politicians. This is an interesting proposal, but in addition to relying on the voters to become informed on issues as Shubik points out, Miller fails to clarify fully how his system would operate. What would happen to lobbyists? What would happen to party structure? What would be the role of bureaus? What would be the reaction of the media under such a system? It might well turn out in realistic circumstances that these proxy politicians are not such "proxies" after all.

Thus, if the populace is sampled, choices based on a different quality of information than if representatives decide will be obtained. Which method is better? This depends, among other things, on the amount and mix of information that one feels it necessary for decisionmakers to have and how representatives are chosen, and such decisions would be among the more important ones made in a constitutional period. Clearly, however, the possibility for different political outcomes is possible as between some form of representation and the national town meeting due to differences in the information possessed by the decisionmakers in each case.

Much of the interest in a national referendum procedure stems from dissatisfaction with the present form of national representation. One of the major problems with the present form of national representation, which is compounded by the monopolistic seniority system in the Congress, is its geographic base.⁶ Tying representation to location gives rise to the much discussed incentives to logroll for the home district, forcing the polity into negative-sum games. Purely national issues presumably have no representatives except the President and Vice-President who are the only nationally elected officials in the present system, and even in this case there is considerable implicit logrolling via campaign platforms that serves to vitiate the President's ability to take a purely national stance on many issues. A related problem is that possibly intense minorities, which are not geographically concentrated, may not be represented at all where representation is based on geography and legislators are constrained to cast one vote per issue. Nor is there any check that voters are reasonably informed in their voting choice, and there is considerable evidence that they frequently are not.⁷ This results (at least in part) from the time costs of becoming informed through debate or otherwise in a specialized and complex world, and as stressed by Downs [7] and others, this may be quite rational. This defect in political procedure will persist so long as at some stage choices about representatives or policies are taken *directly* to the people. So a proposal, for example, to elect a national house of representatives from an at-large list of candidates would suffer from the same problem. Another problem with the present representative forms is that in a large number setting the individual voters may feel powerless to affect outcomes and may rationally decide to abstain on

⁶For a more extensive proposal to deal with the following problems, see [15].

⁷One of the more interesting examples of this—as an alternative to such perennial findings on that a sizable portion of citizens polled respond that the Bill of Rights may be considered subversive (when it is quoted to them without citation), or that “From each according to his ability, to each according to his needs” is a Biblical quotation—is the poll taken by one of the major television networks immediately preceding the 1968 New Hampshire Presidential primary which discovered that a majority of the voters polled did not know that Eugene McCarthy was a “dove” candidate. For a survey stressing that U. S. voters are typically not well informed on public issues, see [8]. For a discussion of the degree of public information and ignorance about fiscal variables, see [5, Chapter 13] and the references cited there.

these grounds.⁸ Finally, the present political process in the U. S. yields much power to the Executive and Administrative branches on expediency grounds.

II

If we accept that some form of national representation is efficient, the remaining task is to decide on the best practical form of such representation. We would like to propose for consideration the selecting of a national legislature *at random* from the voting populace. Dahl [6, pp. 249-153] recently suggested a similar procedure, although only to give advisory votes, and the idea has historical origins in Athenian democracy [See 18, pp. 172-173] and in the work of Rousseau [21, Book IV, Chapter III].⁹ Such a procedure would be a significant improvement over the existing political system in several ways. The incentive for pork barrel activities in order to secure votes would no longer be present since random selection would be independent of geographic base, and for the same reason minorities would be represented in correct proportion to their numbers in the society. Representation by random selection would also return political power to individual voters and give better articulation of voter preferences in the legislative process without sacrificing the efficiencies of representation. The legislature would not be composed of median position representatives as under two-party, geographic

⁸Perhaps pure forms of democracy may be defended on the grounds that voters learn over time. This may be the case, but where you have rational abstention, democratic outcomes are controlled by less than the whole collectivity. Who actually controls in these circumstances is a function of the costs of voting and the individual's perceived stake in the outcomes. One way to handle the problem of non-voting would be to have poll payments instead of poll taxes. To the extent that the failure to vote is a reflection of a divergence between the private and social gains from democratic participation, this proposal would be appropriate to apply. Such a policy would not, however, guarantee informed voting, but only voting. To obtain informed voting some sort of information test would have to be applied. However, the issue of how to evaluate what constitutes informed voting or what requirements ought to exist for voting is complex, and the courts have been moving away from explicit requirements, such as literacy tests, for the right to vote. Nonetheless, even assuming that voters learn over time and also fully participate in democratic process, there may be frictions in realistic democracies so that lags in voters' learning functions may be very costly. Of course, many advocates of democracy as the best workable political system feel that this is not a major problem, because learning behavior over time will at least stimulate the polity to throw out of office over time those with whom they strongly disagree.

⁹See also [3] for a proposed use of random sampling to estimate the demand for public goods, [15] for a discussion of the role of random selection in establishing and operating a system of proportional representation, and [25] for a proposal to use sample electorates to vote in various elections (e.g., the Presidential election). The latter, unpublished proposal of Ward is different from ours in that he does not extend his random selection proposal to a form of representative government, but only to choose groups of voters. Thus, although his system would probably be an improvement over existing methods of selecting representatives, we would argue that it would be hampered by many of the same problems of the existing system, such as high information costs to the sample electorates, that can only be minimized by combining random selection with a form of representative government.

representation. Voter absence or uninformed voting would not be problems under this proposal, and perhaps voter alienation would be less in this case also.¹⁰ If viewed as a replacement for the current forms of national representation, the random selection system removes direct sanctioning power through the ballot from the voter and replaces this control mechanism with a more subtle method of articulating voter preferences on national issues. We would argue that although the final outcome is not clearcut, such a change in representative procedure could be understood by voters as the formal embodiment of democratic equality in an *ex ante* rather than *ex post* sense.¹¹ One could also argue that the mass media aspect of political campaigning would be less of a problem under the random selection system, although this is not certain since the outcome depends on how this system of representation is meshed with existing political institutions (e.g., the Presidency). Finally, and importantly, it should be stressed that random selection of representatives avoids all of the traditional problems in voting theory of intransitivities in voting outcomes and the like in establishing a system of proportional representation [See 2, Chapter 11]. The application of voting theory is confined in this case to the operations of the random legislature once selected, and this feature of representation by lot is an important justification for establishing and operating proportional representation in this way.¹²

III.

The operational details of how such a body would be selected and how it would function are important considerations. Who would be eligible for the legislature? We would argue that everyone in the voting populace would be eligible except those barred by constitutionally agreed upon restrictions. Including as many people as possible in the selection pool would effectively guarantee the representation of the whole cross-section of voter preferences. Thus, there would be few deferments from electoral eligibility for the randomized legislature. When one

¹⁰We should note that it is true that randomly chosen individuals who are not concerned with re-election to office will have no direct incentive themselves to become informed. Even though absenteeism from legislative functions could be controlled, daydreaming could not be. Thus, there would be a problem similar to that of the absence of direct incentives for judges to devote much effort to reaching informed decisions which has recently been analyzed by Tullock [24] (university professors with tenure provide a somewhat similar example). We feel, however, that in case of important, highly publicized decisions, social pressures such as desires to be respected and the like will generally provide rather strong personal incentives for informed choice. Thus, we would expect that with our randomly selected legislature, this would not be a major problem. This consideration could be one argument for public rather than secret balloting, however, and also for making terms fairly limited in duration so that the legislator's reputation might have some influence on his later career (similarly the prospects for advancement to higher courts may be an important incentive for lower court judges to make knowledgeable decisions).

¹¹For the distinction between *ex ante* and *ex post* equity, see [19].

¹²In a related vein Niskanen [16, Chapter 20] recently suggested that review committees in the legislature be subject to random assignment and periodic reassignment. Under majority rule in the legislature this procedure would yield (with some sampling error) an approximation to the median committee member's demand for the output supplied by the bureau under review.

is born, he automatically goes into the electoral pool. Practically speaking, however, the polity may wish to bar some groups of individuals constitutionally. Examples might be children, the mentally ill, criminals, civil servants, and individuals who receive government subsidies. The latter two categories raise the prospect of policing the random legislature to insure against the threat of the selected representative passing laws or raising subsidy rates for his particular pressure group. One might argue that the random legislature would have higher costs of policing against bribe taking and the like, since legislators do not have to run for re-election. However, the present system of electing representatives has similar problems, especially when pressure groups are geographically concentrated. The pool of eligible individuals for the random legislature might have to be restricted to achieve genuine representative behavior, but such restrictions, which set up basically a system of weighted voting would have to be balanced against the loss of sampling accuracy.¹³

How large would the legislature be and what sampling procedure would be followed? The size of the representative group would depend on how large a sample would be required to insure that on average over a series of electoral periods, a good depiction of the cross-section of voter preferences is obtained. In essence, more accurate measurement would have to be traded off against the additional costs of a larger legislature. Dahl argues that 500 or 600 at most is the number of people who could participate effectively in a random legislature [6, p. 152]. This may or may not be the case depending on the amount of sampling error one is willing to tolerate vis-a-vis the costs of a larger legislature and depending on how one meshes the random body with the existing legislative process. Given that there is no prior knowledge about the population proportion being sampled for (50-50), a sample size of 500 would yield a chance of 95 percent that the value being estimated lies within a range equal to the reported percentages, plus or minus an error of 4.9 percent. Doubling the sample size to 1000 would yield a 95 percent chance with a 3.6 percent error. So it is probably true that very accurate samples of the voting populace would have to be large. However, this does not mean that a large random legislature is not feasible or cannot be effective. To judge the feasibility of this method of representation one would have to compare its costs with the costs of the present system of elections and operation and with costs of high information voting. In terms of the effectiveness of such a representative body, it could be meshed with the existing political process by making it a purely advisory body, or as will be discussed below, one house of a bicameral legislature could be designated primarily to respond (i.e., vote on) rather than initiate legislation. In these cases large size would not necessarily be a constraint on its effectiveness. Finally, for less

¹³For example, take the case of individuals who receive a government subsidy. Pursued literally, this would not only exclude welfare recipients, but also homeowners, holders of stock in oil and mineral companies, veterans, and so forth. Furthermore, it would be hard to argue that individuals should be excluded on the grounds of educational qualifications given current attitudes which do not allow literacy tests.

important issues, smaller subsets of the large random body could be used for decision making, allowing many less important issues to be handled at the same time.

The proposed sampling procedure would be random sampling with replacement. The latter condition is not strictly required with a large pool of voters from which to sample; so operationally one might argue that legislators could serve only one term, although this would cause the problem of perpetual "rookie" legislators. Although we propose random selection from the required pool of voters, one might be concerned about insuring the selection of x percentage of a certain race or income level. In this case stratified sampling could be implemented and the legislature would be proportionally random by strata. Indeed, if such a variable as tastes and income are highly correlated, then stratified sampling would lower the required total sample size. However, there would be a new set of problems associated with determining how many strata there should be and in what terms the strata are defined, and we would not want to employ stratified geographic sampling for previously mentioned reasons. Also, the problem of policing the legislature against pressure group legislation would be more difficult under stratified sampling.

Probably the strongest argument for some form of stratified sampling is that under a continuous system of unrestricted random sampling, the probability will approach 100 percent over time that for some draw of the legislature a set of representatives which reflect only a small portion of the underlying population will dominate the legislature (the American Nazi party, for instance) with the possibility of extremely adverse consequences as a result. Strong constitutional provisions and the use of a second house of Congress (see Section IV) could also be used to limit the effects that an unrepresentative, intolerant legislature might have while in office, and we would argue that the frequency of occurrence of such situations under our proposals is likely to be considerably less than what we have historically observed under alternative forms of government.

A problem related to the selection of the randomized legislature is how to compensate the selected legislators. One might argue that the opportunity costs of selected individuals ought to be paid and therefore a system of discriminatory wages would be required. In such a system an individual would be no more or no less better off for being selected.¹⁴ However, while attractive on efficiency grounds (and in one sense of equity), this procedure is probably not feasible because of all the problems of estimating and discounting the appropriate opportunity costs and also of maintaining a well-working legislature with differential rates of pay. An obvious second-best solution would be to take existing Congressional pay scales as

¹⁴In part this is a question of how much society should invest in government, and it is an implication of recent work on vote trading that a well-working government may embody great potential gains from trade for democratic citizens. Hence, investments in democratic process may have big payoffs. See [14].

approximate to the "proper" common wage for national legislators and pay this wage and any extraordinary costs to those selected. The problem in this case consists of whether or not you require people to be in the selection pool. On the grounds of obtaining the proper sampling characteristics, there would probably have to be a requirement to be in the pool. However, this creates problems of compensation when, for example, an individual with a \$100,000 opportunity cost is selected.¹⁵ This problem is precisely analogous to the economics of conscription for military or jury duty where non-economic objectives such as racial balance may require violating strict opportunity cost dictates in recruiting or conscripting for such tasks.¹⁶ In the case of the randomized legislature we would agree that an initial wage commensurate with existing Congressional pay scales would vitiate the major problems of requiring people to be in the selection pool. For those individuals with low opportunity costs who are selected, we would propose that they simply be allowed to earn the fortuitous rents caused by paying the uniform, high base wage. Also, if one were worried about random legislators voting themselves pay raises due to their lame duck status, Congressional pay scales could be set constitutionally and adjusted for productivity growth or increases in the cost of living. As another possibility, pay increases could be made for the subsequent session of legislators. So long as there were not a large proportion of staggered terms (see the discussion in the next paragraph), this procedure would help ensure against lame duck pay raises.

In terms of the functioning of the legislature, what would be the most desirable term of office? One cannot say for sure, but the fundamental reason for changing office under this system would be to detect changes in the distribution of voter preferences across the spectrum of national issues. In practice one would have to establish the trade-off between start-up costs (perpetual rookie legislators) and career dislocation costs (which would probably rise exponentially in relation to time in office) and the desire to collect accurate decentralized information while maintaining the appropriate incentives for representative behavior. Possibilities would range from short, non-staggered terms to career appointments upon selection with staggered terms.

How would this legislature mesh with the existing forms of national government? Several of the following alternatives for the new legislature might be explored:

- a) An additional national legislature to the present two,

¹⁵ It might be possible to allow individuals with high opportunity costs to buy substitutes in this case. There would be a sacrifice of randomness here, but the rich may be "over-represented" in democracy in the first place.

¹⁶ To be fully analogous to the costs imposed by the military draft, any costs associated with the disruption of one's civilian career would also have to be estimated and discounted at the appropriate rate of time preference. See [13] and [26].

- b) An additional national legislature replacing one of the present two,
- c) An exclusive national legislature replacing the present two,
- d) An exclusive national legislature with another nationally elected body,
- e) A mandatory national legislature to be used if requested by the present two legislatures or the President, and
- f) An advisory national legislature to be used if requested by the present two legislatures or the President or to be required to give advisory votes on selected issues.

Perhaps the more feasible alternative, at least on a short-run experimental basis, is the last. In this case, the central problem is whether the votes of the randomized legislature would be binding (and if so, in what form, i.e., what voting rule would be required to pass a law?). If the votes of such a body were binding in some form, then the political system could be characterized as government by randomized jurors. In this form the randomized legislature could be viewed as a more formal embodiment of its current functional equivalents—the Presidential commission, the White House conference, and the like. The Presidential commission, for example, is a method under present institutional arrangements to gather a range of informed public opinion on a given issue (of course, this is not the only function which commissions sometimes perform). Also, the advisory random body would officially sanction and improve (due to fuller information) public opinion polls. If the voters of the randomly selected body were to be only advisory, a smaller body could be maintained, and in a sense the polity would seek the counsel of a smaller number of randomly selected qualified persons on certain issues.¹⁷

Our basic point is that the use of randomly selected bodies is a powerful method for reconciling the specialization advantages of representation with a fuller representation of voter preferences and to show that one can get a better representation of voter preferences than exists under the present system without going to a pure referenda system. Also, one avoids traditional voting theory problems of aggregating voter preferences by selecting representatives (though not in the operations of the random legislature) in this method. While the operational details under any given embodiment of our proposal present problems and we have surely missed many important points that would have to be considered in meshing

¹⁷Another interesting issue is whether the votes of the random body would be open or secret. The present national legislature has to have open voting so that constituents know how their representatives vote. This is not necessarily the case with the random body, particularly if one does not allow re-election of legislators. Thus, the issue of open or secret voting in the random body would revolve partially around the kind of voting response bias that the collectivity desired since *both* open and secret balloting would have inherent response bias. Of course, under either open or closed voting, care would have to be taken to insulate the legislators from lobbying pressures and to see that they cast informed votes. Closed voting might help in the former regard if it increased the uncertainty in vote buying, whereas open voting would help the latter cause since the impact of one's decision can affect his future career.

the random body with the rest of the process of government, these are no more insurmountable than those of organizing our present national legislatures, and we would urge experimentation along the lines of our proposal. Following Dahl [5], we could argue that such experimentation is essential if democracy is to be given an opportunity to work and democratic power is to be returned to the people.

IV.

A final point is that political entrepreneurship would probably suffer under an exclusive random system. In some respects, such as the problems of mass media and the technology of modern politics (dollar democracy), this would be desirable. However, to maintain the production of innovative policies and to produce what one might term "political X-efficiency," we might add to the random system a sort of executive committee or senate, to be elected nationally from an at-large list of candidates. For example, twenty seats for this group could be established, and political entrepreneurs could campaign for seats. This group in a sense would represent the formal continuation of the present Senate in much smaller size and would serve to lessen the problem of Executive discretion in the present system. This senate could be elected by the general public or by the larger random body. The advantage of having the senators elected by the general public would be to maintain a sense of voter participation in the system whereas the advantage of having them elected by the random body would be the attainment of virtually the same electoral outcomes for less costs of political entrepreneuring. There would be problems with defining which decisions this group would control and which decisions the President would control, but the principle on which such a division of issues would be undertaken would basically be how quickly a decision needed to be taken by the Executive Branch. Also, if one desired a very large random body for sampling accuracy reasons, then this smaller body could originate legislation. In this way the larger random group could function effectively, despite its size, with its primary function being to vote on proposals originated and debated by the smaller, elected senate.¹⁸

The persevering reader may be convinced by now that we are writing a piece of science fiction rather than analyzing a serious proposal to reform democratic decision making.¹⁹ We argue, however, that the time is long since past when this country should have commissioned a body to look analytically at its electoral procedures. In such a setting proposals like ours and Miller's and the work of others in this vein can be discussed seriously on their practical and theoretical merits.

¹⁸Mill advocated an executive council or small group of experts to write and initiate legislation in his system of proportional representation. Presumably, this group in Mill's system would be the functional equivalent of the modern committee staff. This is related, but somewhat different, from our proposal where the initiating body is elected. For Mill's discussion, see [11, Chapter V].

¹⁹He is somewhat justified in this regard as Robert Heinlein discusses a random selection proposal in [9]. However, as we indicated earlier, there are also precedents for this type of consideration in the practice of Athens, the work of Rousseau, and more recently, the work of Robert Dahl. Indeed, in popular commentary William F. Buckley's frequently repeated statement that "he would rather be governed by the first thousand names in the New York telephone directory than the faculty at Harvard" also comes to mind. We might also note that more than one work of science fiction has made worthwhile contributions to political science. See, for instance, the discussions in [10] and [20, pp. 5-7].

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