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THE POSSIBILITY OF A SOCIAL WELFARE FUNCTION

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By a social welfare function, or "constitution," or "arbitration scheme," or "conciliation policy," or "amalgamation method," or "voting procedure," is meant a rule which associates to each profile of individual preference orderings a preference ordering for the society itself. Is it possible to articulate such a social welfare function? If we demand that our social welfare function satisfy certain ethically acceptable constraints the answer to our question is not immediately obvious.

Kenneth Arrow, in his *Social Choice and Individual Values,* investigated the possibility of specifying a social welfare function which would satisfy certain socially desirable criteria.

Antecedent to this specification Arrow demanded of the individuals in the society that they be, in some sense, rational. That is, the individual's preference profile should exhibit transitivity of preference and indifference and connectedness.

Arrow's conditions imposed on the social welfare function were these:

(1) Unrestricted Domain: The domain of the social welfare function should include all logically possible combinations of individual orderings.

(2) The Pareto Principle: If all individuals in the society prefer one option to another or are indifferent as to these two options the social choice should reflect these relationships.

(3) The Independence of Irrelevant Alternatives: The introduction of new options should not alter the preference or indifference relationships already established within the individual profiles.

(4) Non-dictatorship: There is no individual such that in those situations in which he prefers one option to another society does likewise, regardless of the preferences of the other individuals.

Arrow proved his General Impossibility Theorem: If there are at least three options which the members of a society consisting of at least two members may order then every social welfare function satisfying conditions (1), (2) and (3) is dictatorial.

This astonishing result provoked three kinds of responses:

(1) Arrow's proof is flawed and therefore a democracy satisfying the conditions which Arrow imposes is possible.

(2) Arrow's proof is correct. A democracy satisfying the conditions which Arrow imposes is impossible.

(3) Arrow's proof is correct but his conditions fail to capture a notion of a democratic society which we could still, in some sense, accept. This type of democracy, it is hoped, would be Arrow immune.

Arrow's amended presentation of the proof remains unchallenged. Consequently the first line of attack against the Impossibility Theorem has been nullified. As a result pessimists were free to accept the second response and champion the death of democracy.

However, recalcitrant egalitarians selected the third approach. It is with their general line of attack that we will be concerned.

II.

In 1951 Arrow wrote, "The viewpoint will be taken here that interpersonal comparison of utilities has no meaning and, in fact, that there is no meaning relevant to welfare comparisons in the measurability of individual utility." (Arrow, 1963:9)

Arrow crystallized his attitude here in the form of the Independence of Irrelevant Alternatives condition. It is perhaps not immediately apparent how this condition restricts this sort of utility comparison. But von Neumann and Morgenstern demonstrated that the comparison of two options, between which a relationship of preference had been established, with a third option which was strictly irrelevant to this initial comparison leads to the establishment of a system of numerical utilities permitting linear transformations. This system would permit, though it does not strictly entail, an interpersonal comparison of utilities.

Given this opening Arrow's critics have attempted to show that an interpersonal comparison of utilities, if admitted as a condition which a social welfare function should fulfill, would permit a social choice system immune from dictatorial control. The difficulty lies in showing that an interpersonal comparison of utilities is meaningful.

Ilmar Waldner's (1972:102) efforts to establish a meaningful interpersonal comparison of utilities have been more serious than most. But finally he is compelled to confess, "My argument has been against the common assumption that it is impossible to have empirical justification for interpersonal utility comparisons. I do not regard myself as having given an empirical justification of the required kind."

Arrow never denied this possibility; rather what he denied was that we were now in the possession of such a method of utility measurement.

But Arrow, himself, has recently admitted, "that the austerity imposed by this condition (the Independence of Irrelevant Alternatives) is stricter than desirable; in many situations we do have information on preferences for nonfeasible, i.e., irrelevant, alternatives." (Hook, 1967:19).

At this point it might be said that Arrow himself had destroyed his own Impossibility Theorem by diluting one of his own conditions. Perhaps

Arrow's result is not so disturbing after all. Unfortunately Schwartz (1970:89-106) has shattered this illusion.

III.

Schwartz adds four conditions to those set forth by Arrow which allow interpersonal comparisons of utilities and even cardinal utility comparisons. Nonetheless, Schwartz proves that even with these drastic alterations in the conditions for a social welfare function the resultant function is either inconsistent or despotic. Arrow's critics have been rebuked, again.

First we should consider two additional conditions which Schwartz grafts to Arrow's original ones. These so-called decisiveness conditions are operative in those situations in which two options are deadlocked. It can occur that the sum of cardinal utilities of all the members of the society, excepting one individual, favoring one particular option is equal to the cardinal utility of that one individual who is opposed to this selection. Schwartz demands, by his decisiveness conditions, that should this one individual's selection over-ride the preference of all the others, for what Schwartz enigmatically refers to as "other reasons," than this unique individual is a despot.

Our analysis of Schwartz's program, at least on the positive side, is that Schwartz, perhaps unwittingly, has uncovered another condition which we reasonably expect a social welfare function to fulfill - viz., "decisiveness." Consequently Schwartz has shown us, albeit implicitly, that we may well be hooked on the horns of a new dilemma. Apparently if our society is to act decisively it will do so only under despotic decree or if our society is to act democratically we are propelled towards political deadlock.

IV.

My proposed solution to the dilemma of despotism or deadlock can, here, be only roughly sketched in. My view is that it is rational for a society which is democratic in a broad sense to permit certain individuals to exercise, for "other reasons," mildly despotic powers. Of course it is well known that certain individuals in the most democratic societies extant exercise powers far in excess of those wielded by ordinary members of that society. The problem is, however, that the people in these societies are persuaded to believe that Arrow's conditions are their basic political birthright while at the same time silent despots steal away with the decision making power. Again it may be protested that what has been just described occurs with such deplorable frequency that a recounting of it here merely cloys. But those obsessed with the problem of despotism seldom explore the obverse of this situation, political deadlock.

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May (1973:85-87) points out that in the United States political deadlock, at least in the presidential elections, was an imminent danger in 1972 and 1968. May charges that political amateurs, using an irrationally conceived system, were responsible. He claims that in 1972 the Democratic nominating convention selected George McGovern with ample knowledge that McGovern could not win and that his candidacy would be detrimental to other party candidates. May is no mere partisan for he makes it clear that the Republican nominating convention committed the same blunder with their Goldwater nomination in 1964.

For this reason May believes that current party moves to broaden participation in the nominating conventions aggravates this problem by opening up the conventions to more political amateurs. May's scheme to correct this situation is to lodge the power to nominate candidates for the presidency in the hands of objective party professionals.

May proposes that party senators, congressmen, governors, top-ranking state legislative officials and big city mayors, either incumbent or nominee, from marginal or non-marginal states, be allotted from one to three convention votes based on an appropriate mix of these factors. Details of this plan aside we can now give substance to Schwartz's plea for despotic decisiveness based on "other reasons;" at least, for this particular case.

Among these "other reasons" are the following. These officials are elected representatives. These officials have political acuity and they will realize that should a candidate for presidency be selected whose chances of winning are slim their own political fortunes may well decline with his defeat.

Our point is simply this. We have concluded that a procedure for avoiding deadlock is a reasonable requirement for a political system. An empirical examination of our own presidential nominating conventions gives credence to this demand. May has suggested that a "weighing" of individuals involved in a social decision process will greatly reduce the danger of political deadlock. The general problem facing us now is to sharpen our crude notions of "weight" in some systematic manner. We do not assume that this task is an easy one. It may be that several particular social welfare functions are needed. But certainly there is a possibility of finding a social welfare function or functions which will accomodate both democratic and rational demands. To find this is the challenge.

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