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DEMOCRACY AND INTERDEPENDENT PREFERENCES

ABSTRACT. In a democracy, the views and wishes of the citizens are to count. The problem here is how this dictum is to be understood. I suggest that a proper analysis requires that each person's preferences be seen in the context of his beliefs concerning the preferences of the others and of the preferences he would have if he held different beliefs. Preferences founded on erroneous beliefs call for special consideration. So also do certain reluctantly held preferences. I propose a decision-policy involving the identification of social equilibria of preference.

The fundamental democratic position is that, in all matters of public concern, the views and wishes of the people involved are to count, and that nothing else is to count. The familiar problems here have to do with the proper scope of public concern and with the delimitation of the set of the people involved. But however we resolve these issues, the deeper problems remain. We are left with the question of how to specify what it is that ought to be counted and with the question of what is to count as counting. I shall work out some answers to these two questions.

Consider any public issue. An issue of this sort is raised when we note that there are several courses open to society, when we acknowledge the availability of what I shall call *social alternatives*. To avoid unnecessary complications, think of the social alternatives as mutually exclusive. And suppose that the position of everyone involved is internally consistent, that each person's preferences are both transitive and asymmetric. The preferences of the various people are almost certain to conflict, and any decision will have to resolve these differences one way or the other. Solomon decided such matters *ad hoc*. The average citizen has good reason to distrust arbitrariness. He wants to see issues settled in accordance with some policy.

A conflict of preferences can be resolved in a stronger or a weaker sense. A decision-policy may accordingly be expected to serve either one of two purposes. We may want it to establish consistent social priorities – I shall refer to these as *social preferences* – with regard to the social alternatives. Or we may only want it to identify some alternative as the one to be pursued, and so to direct us to a *social choice*. But this duality

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need not trouble us. A simple democratic expedient, in either case, is to consider everyone's preferences on every pair of alternatives and let every majority decide. Then alternative p is socially preferred to alternative q if and only if p is preferred to q by a majority. And if one alternative is either socially preferred or socially indifferent to each of the others, that alternative is the one to be chosen. If there is a tie at the top, the choice can be made from the topmost alternatives by lot.

In many situations, the majority rule does the job. It determines consistent social preferences and unique social choices on the basis of sets of consistent individual preferences. But suppose that only three people, A, B and C, are involved, and that the issue consists of three alternatives, p, q and r. A prefers p to q and q to r. B prefers q to r and r to p. And C prefers r to p and p to q. Each person's preferences are both transitive and asymmetric. Let these preferences be summed in accordance with the majority rule. Since two of the three people prefer p to q, two of the three prefer q to r and two of the three prefer r to p, there is a social preference here for p over q, a social preference for q over r and a social preference for r over p. There is no social preference for p over r. This goes against transitivity. Thus though each person's preferences are consistent, the social preferences are inconsistent. And since none of the alternatives is either socially preferred or socially indifferent to each of the others, none can be singled out as the one to be pursued. It turns out that the majority rule is neither invariably effective in establishing consistent social preferences nor invariably effective in determining social choices.[1]

The majority rule may be good enough for ordinary use. It does not generate inconsistencies in every context, and the situations in which it is applied may all be safe ones.[2] But as a formal criterion of democratic counting, it will not serve. Something better will have to be found. The unsettling part of it is that the difficulties of the majority rule can be generalized.

Grant for the moment that a democratic social-preference policy must accord with the following three principles. It must be *nondictatorial* – it may not establish one alternative as socially preferred to another whenever some specific person prefers the first to the second, regardless of the preferences of any of the others on these two alternatives. It must be *Pareto-optimal* – it must establish one alternative as socially preferred

to another if every person involved prefers the first to the second. And it must be *preference-oriented* – the social preferences it establishes with regard to two alternatives may depend only on people's preferences with regard to these alternatives. All this may seem unexceptionable. But Arrow [2] has shown that no social-preference policy satisfying these conditions establishes a consistent set of social preferences in every context of consistent individual preferences.[3] And Hansson [9] has gone on to show that no social-choice policy satisfying analogous conditions makes for a social choice in every such context. So the majority rule, which satisfies each of these conditions, is not the sole offender. Nothing of the sort will serve.

The obvious suggestion is that we are looking for the wrong sort of thing. The conclusions Arrow and Hansson have established are grounds for supposing that our sights are set too high, that some of our conditions for democracy are excessive and might be modified.[4] In his recent writings, Arrow himself has taken this line. He now believes that a preference-orientation is too narrow.[5]

The principle of preference-orientation is indeed not compelling.[6] Suppose that ten alternatives are at issue and 101 people involved. Ranking the alternatives in the order of their preference, 50 of the people rank p first, q second and the remaining alternatives below q; another 50 rank q first, p second and the remaining alternatives below; and one person ranks p first, q tenth and the other alternatives between. Thus p has 51 first place votes and 50 second place votes, and q has 50 first place votes, 50 second place votes and one tenth place vote. An unbiased observer might hold that p should be socially preferred to q.

But change the situation slightly. Let the first 50 people, as above, rank p first, q second and the other alternatives below. The second group of 50 ranks q first, p *tenth* and the other alternatives between p and q. One person again ranks p first, q tenth and the other alternatives between. Now p has 51 first place votes and 50 *tenth* place votes, and q, as above, has 50 first place votes, 50 second place votes and one tenth place vote. The unbiased observer would not have so easy a time of it here. He may well decide that q should be socially preferred to p. But the individual preferences with regard to p and q are the same here as above – 51 people prefer p to q and 50 prefer q to p. Thus if p is socially preferred to q above, and q is socially preferred to p here, this must be because of the

different ways in which p and q stack up against the other alternatives in the two cases. And thus it must be because of preferences extrinsic to the issue between p and q. I am not saying that the observer must decide differently in these cases, but only that he might. The point to note is that the tally with regard to p and q alone is not decisive. The principle of preference-orientation cannot be considered binding.

Where does this take us? The principle of preference-orientation states that a social preference with regard to two alternatives may depend only on people's preferences *with regard to these two alternatives*. It turns out that this will not do. If we want to continue to maintain that, where any subset of the alternatives is being considered, only the attitudes of the people involved are to count, then these must be allowed to include preferences with regard to *any* pair of the social alternatives. A set of someone's preferences is a preference-*ranking*. What the democrat may be saying is that a social preference with regard to two alternatives may depend only on people's *rankings* of (over) *all* the social alternatives. Call this the principle of *ranking-orientation*. Suppose we substitute this principle for that of preference-orientation. Our initial conception of democracy as the summation of preferences singly then yields to a conception of democracy as the summation of rankings in their entirety.[7]

This clears the air. Arguments of Arrow's and Hansson's sort can no longer be presented. It is easy enough to formulate social-preference policies satisfying the conditions of nondictatorship, Pareto-optimality and ranking-orientation and establishing consistent social preferences in every context of consistent individual preferences. Analogously for social-choice policies. But I do not want to make too much of this, for we are not much better off than before. It seems to me that a ranking-orientation is unacceptable. It is an improvement on a preference-orientation, but it is still too restrictive. We shall come to this matter in a moment.

Here we must pause to consider the concept of preference itself and to make some distinctions. We shall take the *objects* or *foci* of preferences to be hypothetical states of affairs, or *propositions*. Note that preferences may focus on propositions of any (noncontradictory) logical form. Let p, q, r and s be propositions. We may prefer not-p to q-and-r and p-or-q to if-r-then-s. Suppose that someone prefers p-and-r to q-and-r, that is, p-in-the-context-of-r to q-in-the-context-of r. If he believed r, he would have to prefer p to q. I shall say that he has a *conditional* preference for p

over *q*, a preference *conditional upon r*. (It would be more proper to say that the condition is *a belief in r*, but let this pass.) If a person prefers *p* to *q* and also prefers *p*-and-*r* to *q*-and-*r* – if he prefers *p* to *q* both *actually* and *conditionally upon r – and* believes *r*, I shall say that he has a *conditioned* preference for *p* over *q*, a preference *conditioned upon r*.

These definitions presuppose a generic concept of preference. I am taking all nonconditioned, actual preferences to be preferences *come-what-may*. That is, I am concerning myself only with *categorical* preferences. A person categorically prefers *p* to *q* if and only if, for every proposition *r* that is compatible, given his information, both with *p* and with *q*, he prefers *p*-and-*r* to *q*-and-*r*.[8] Note that all categorical preferences are conditional. (The converse is, of course, false.) Note also that it follows from categoricity that unless *s*-and-*t* is incompatible, given a person's information, either with *p* or with *q*, he cannot consistently prefer *p* to *q* conditionally upon *s* and prefer *q* to *p* conditionally upon *t*. It also follows that, in the absence of incompatibilities, he cannot consistently prefer *x* to *y* conditionally upon *s*, prefer *y* to *z* conditionally upon *t* and prefer *z* to *x* conditionally upon *u*.

I now want to identify a class of conditional preferences I shall refer to as *dependent* preferences. These figure centrally in the discussion that follows. A conditional preference is a *dependent* preference when it is conditional upon someone's maintaining some specific preference, or upon some proportion of those in some group maintaining that preference, or upon some compound of such preference-propositions.

Some examples may be useful. Jones is convinced that elective schoolboards will make a bad situation worse. But he believes that most people prefer elective boards to appointive boards, and he prefers elective boards in the context of a general preference for them to appointive boards in that context. So he too prefers the boards being made elective. His preference for elective over appointive boards is dependent upon the preferences of the others for elective over appointive boards.

Another example. Smith is having his dinner bill put on a credit card. He does not usually care how he pays, but the food was terrible and he knows that the management prefers cash to cards. So he now prefers paying with a card to paying in cash. His preference for cards over cash is dependent upon the management's preference for cash over cards.

In these two situations both the dependent preference and the prefer-

ence depended upon focus on the same propositions. This is not always the case. Consider fashions. Miss Brown prefers wearing midi-skirts to wearing mini-skirts because she believes that Miss Black prefers wearing midis – prefers that *she* (Miss Black) wear midis – to wearing minis. Or consider social conventions. I prefer my driving on the right to my driving on the left because I believe that you prefer *your* driving on the right to *your* driving on the left, and vice versa. Or consider the situations economists describe as *externalities*. In a typical definition, an externality is said to be present when "the utility of an individual, A, is dependent [not only] upon the activities... that are exclusively under his own control or authority but also upon another single activity... which is... under the control of a second individual... presumed to be a member of the same group."[9] Here A's utilities – and thus at least some of his preferences – depend upon the *activities* of another, but if we may suppose that a person acts as he does only if he prefers acting that way to acting otherwise, then an externality often generates a dependency.

Now to pick up the thread of our discussion. I want to argue that a ranking-orientation is too restrictive. Two matters suggest themselves. Suppose first that p, q, r and s are social alternatives, that Jones prefers p to q, that this preference is dependent upon Smith's preferring r to s, but that Smith does not in fact prefer r to s. Since the actual preferences of those involved are part of the data of a decision problem, it follows from the data of the problem here that Jones' preference for p over q depends on a falsehood. It seems to me that rankings containing preferences conditioned upon false propositions concerning the preferences of others have at best a weak claim on our respect. Indeed, a person may hold that, should his own ranking turn out to contain such ill-founded preferences, that ranking ought not to be counted in every context.

An example. Many of the English and French who, during the Munich crisis of 1938, preferred the partition of Czechoslovakia to war with Germany based this preference on the belief that Hitler preferred peace to further aggrandizement. This was not so. Some of these people might later have argued that, had a referendum somehow been arranged, and everyone's preferences on all related issues been honestly reported, then their own preferences on the Czech issue, and thus their rankings, should have been ignored.

Ignoring the rankings of some of those involved would not violate the

principle of ranking-orientation. This principle does not say that all the rankings must be counted, but only that nothing else may. But if we did ignore some of these rankings, the people passed over would have no voice in the determination of the eventual decision. And this goes against the spirit of democracy.

Consider a second sort of situations. Once again, *p*, *q*, *r* and *s* are social alternatives. Jones prefers *p* to *q*, this preference being dependent upon Smith's preferring *r* to *s*. Smith does prefer *r* to *s*, his preference depending upon Jones' preferring *p* to *q*. Both preferences here depend upon true propositions. But it may be that Jones and Smith maintain these preferences reluctantly. Each would maintain the converse preference if he thought that the other did, and both would be happy to shift. But neither will change his preference unless he thinks that the other will, and neither expects this to happen. A policy of respecting people's preferences ought not to require that the rankings to which such reluctant preferences belong must always be counted.

An example. It used to be the custom to schedule parades on Fifth Avenue in New York on various minor holidays. People grumbled whenever these fell on a weekday, for the parades then blocked traffic in all directions. But it was, by and large, admitted that New Yorkers approved of the parades, and that the inconvenience would therefore have to be borne. In conceding the propriety of the parades, the grumblers themselves contributed to the approval they noted. Indeed, to a large extent, their grudging concessions constituted that approval. The weekday parades were eventually dropped. In the context of a ranking-orientation, this was an undemocratic move. And yet it met with general acclaim.

A grimmer case. Some of the blacks now prefer separatism to integration, convinced that the whites will always prefer it that way. The more empathetic whites support the blacks in this. There might come a time when all of the blacks prefer separatism to integration because they know that the whites do, and all of the whites maintain this preference because they know that the blacks do, everyone all the while deploring this state of affairs. Pareto-optimality itself would then require separatism. So much the worse for Pareto-optimality. I doubt that democracy is bound to honor such dismally interlocked preferences. It follows that it need not honor the rankings in which such preferences hold. But in the context of a ranking-orientation, this implies that a democracy may on occasion

ignore its citizens altogether. There is certainly something wrong here.

What way out does democracy have? Since a ranking-orientation is too narrow, let us work out one that is broader. First some ancillary concepts.

A *conditional ranking* is the set of all those of a person's conditional preferences that are conditional upon some specific proposition. Suppose that Jones prefers p to q conditionally upon Smith's preferring r to s, and that he prefers s to r upon the same condition. Then both of these conditional preferences belongs to Jones' ranking conditional upon Smith's preferring r to s. Suppose also that Jones prefers t to u conditionally upon Smith's preferring v to w. Then this conditional preference belongs to Jones' ranking conditional upon Smith's preferring v to w. Each of these three conditional preferences also belongs (due to categoricity) to Jones' ranking conditional upon Smith's preferring r to s and v to w. A derivative concept is that of a conditional ranking *of a restricted set of propositions.* The conditional preferences in this case focus on the specified propositions only. (Where no confusion threatens, I may refer to the set of these propositions itself as the ranking.) The concept of a *conditioned* ranking is another obvious extension.

I shall refer to certain sets of conditional rankings as preference-*perspectives.* Suppose again that Jones prefers p to q conditionally upon some singular preference- (or indifference-) proposition, say the proposition that Smith prefers r to s, and that Jones does not also prefer p to q conditionally upon the negation of this proposition. (A dependency of this sort can be described as *nonvacuous.*) Then the three propositions that Smith prefers r to s, that he prefers s to r and that he is indifferent as to s and r compose what will be called one of Jones' *dependency-sets.* The conjunction of one proposition from each of some set of dependency-sets is one of Jones' *dependency-expansions.* Consider now only those of Jones' dependencies that depend on propositions concerning the preferences of the other people involved, and moreover only on those of their preferences that focus only on the social alternatives. Jones' *perspective* on the social alternatives and the people involved is the set of the conditional rankings of the social alternatives he founds upon the dependency-expansions obtained from these dependencies and upon their various alternations. (The qualification 'on the social alternatives and the people involved' will be left implicit in what follows, but it should be kept in mind that we

are concerned only with perspectives of this sort.) If a person has no nonvacuously dependent preferences whatever, his perspective will be said to consist of his actual ranking of the social alternatives.

If Jones' only nonvacuously dependent preferences are those focusing on p and q, on r and s and on t and u cited above, then he has two dependency-sets and nine dependency-expansions, and if, further, all the propositions mentioned are social alternatives and Smith is one of the people involved, then Jones' perspective consists of 511 conditional rankings. (Some of these may be null – marking absences of preference only – and many rank the alternatives in the same order.) Note that Jones' conditioned ranking(s) of the social alternatives is (are) bound to be among these 511. He need not believe any specific dependency-expansion, but he must believe some alternation(s) of them. At the very least, he must believe the alternation of them all.

We have defined perspectives in terms of preferences dependent upon singular preference- (or indifference-) propositions. What if Jones' preferences depend upon conjunctions of such propositions, or upon alternations of them, or upon propositions saying that all the people or some smaller proportion of them have a certain preference (or indifference)?

Consider the latter two cases first. A preference-generalization is equivalent to a conjunction of singular preference-propositions, and a proposition about the preferences of some smaller proportion of people is equivalent to an alternation of such conjunctions. *Everyone* prefers p to q if and only if a_1 prefers p to q and a_2 prefers p to q and... a_z prefers p to q, where $a_1, a_2, \ldots a_z$ are all the people there are. A *majority* of the people prefer p to q if and only if *either* a_1 prefers p to q and a_2 prefers p to q and ... a_n prefers p to q *or* a_2 prefers p to q and a_3 prefers p to q and... a_o prefers p to q *or*..., where the number of conjuncts in each conjunction is the first integer after one-half the number of all the people there are, and the alternation contains all the combinations of this length. Propositions about *many* or *most* of the people must be made more explicit before they can be spelled out as alternations of conjunctions, but the pattern of analysis is the same. So if Jones prefers p to q conditionally upon a preference-generalization, his preference is conditional upon a conjunction of singular preference-propositions, and if he prefers p to q conditionally upon the preferences of some smaller proportion of people, his preference is conditional upon an alternation of such conjunc-

tions. (Since Jones does not know all the people there are, the singular propositions must identify them obliquely – e.g., as the first person in the alphabetical list of all the people there are, the second person in that list, etc.)

This brings us to those preferences that depend either on conjunctions or on alternations. A person prefers *p* to *q* conditionally upon either-*r*-or-*s* only if he prefers *p*-and-*r*-and-not-*s* to *q*-and-*r*-and-not-*s* and prefers *p*-and-*s*-and-not-*r* to *q*-and-*s*-and-not-*r*. (This is a consequence of categoricity.) Thus he prefers *p*-and-not-*s* to *q*-and-not-*s* conditionally upon *r* and prefers *p*-and-not-*r* to *q*-and-not-*r* conditionally upon *s*. Where the alternation depended upon is an alternation of singular preference-propositions, the dependency consequently involves a set of simple dependencies of the sort already considered. Where one or more of the alternants is a conjunction of singular preference-propositions, one or more of the implicit dependencies depends upon a conjunction.

A person prefers *p* to *q* conditionally upon *r*-and-*s* only if he prefers *p*-and-*r*-and-*s* to *q*-and-*r*-and-*s*. This says that he prefers *p*-and-*r* to *q*-and-*r* conditionally upon *s* and prefers *p*-and-*s* to *q*-and-*s* conditionally upon *r*. So a preference dependent upon a conjunction of singular preference-propositions likewise involves a set of simple singular dependencies. It follows that every dependency corresponds to a set of singular dependencies, and consequently that every nonvacuous dependency generates one or more dependency-sets. A person's perspective thus takes in all of his pertinent nonvacuous dependencies.

We can now try to develop some way of establishing social preferences on the basis of nothing but the individual perspectives of the people involved. The injunction to attend only to perspectives can be called the principle of *perspective-orientation*. If we substitute a perspective-orientation for a ranking-orientation, we replace our conception of democracy as the summation of rankings with a conception of democracy as the summation of perspectives. Here we step into unfamiliar territory. But this reinterpretation of democracy is no more drastic than our earlier move from a preference-orientation to a ranking-orientation. That move did not involve the discrediting of preferences, but only a decision to consider preferences in the context of the rankings in which they hold. So also here. We are not proposing to look beyond rankings, but only to consider every ranking in the context of the perspective to which it belongs.

In looser language – I am suggesting that a democracy must be sensitive not only to people's actual preferences over the social alternatives but also to what they would prefer if they thought that the preferences of the others had changed. These if-he-wanted-this-then-I-would-want-thats reflect the other-directedness of the people involved. They distinguish the preferences of neighbors and partners and friends and enemies from the preferences of people who are strangers to one another. A policy that took account only of actual preferences over social alternatives would ignore the distinctively social dimension of our systems of preferences.

Note the difference between other-directedness and altruism. Altruism is a concern for the interests of others. Other-directedness is a sensitivity to their preferences. If we permit some stretching of ordinary usage, both other-directedness and altruism can be either well-intentioned or ill-intentioned (or neither). Each of the orientations considered in this paper allows for altruism. But altruism is not an essentially social sentiment. Something very like it may affect our behavior toward lower forms of life. Not so with other-directedness. This requires all parties to be capable of preferences, and is, as a rule, the consequence of some communication between them. It reflects the inter-personality of our dealings with others. Thus failing to take account of it would commit us to a false individualism.[10]

Our new concepts provide for further revisions of our initial principles. We have already noted (in the example of the segregationists) that the classical principle of Pareto-optimality is too strong. A unanimous preference for one proposition over another does not invariably call for a social preference for the first over the second. The proper course is now clear. All of everyone's relevant conditional rankings must be considered. If one proposition is preferred to another *in every ranking of every perspective*, then the mandate is both unanimous and unequivocal. In a case of this sort, the first proposition must be socially preferred to the second. This gives us a revised principle of Pareto-optimality.

It turns out that the principle of nondictatorship is also too strong. If everyone were to say, "Lord, not as I will, but as Thou wilt," then whoever this Lord may be – provided only that he is the same for all – his preferences might be allowed to be decisive. The preferences of the others, if they differed from the Lord's, could be overruled. (These preferences would in that case be founded upon erroneous beliefs as to what

his preferences are.) But though democracy may have to tolerate slavishness, it cannot provide for tyranny. No proposition may be socially preferred to another whenever some specific person prefers the first to the second, regardless of the preferences, *in any ranking of anyone else's perspective*, with regard to these two propositions. This is our new principle of nondictatorship.[11]

In reshaping our three principles of democracy, we have made each of them less demanding. This should make it easier to develop an acceptable decision-policy. But we are still not out of the woods. I can think of only two summation procedures here, one attractively simple but simple-minded, the other more sophisticated but out of bounds.

In the first procedure, we start by numbering the alternatives in each ranking of each perspective, the highest-ranked alternative in a ranking being assigned the highest number. (Where alternatives are tied, we suppose that they are ranked in some order or other and divide the sum of the numbers they would in that case have been assigned equally among them.) We next compute the average of the numbers assigned to an alternative in the several rankings of a perspective. This yields an overall valuation of that alternative in that perspective. Repeating this for all the alternatives, we establish an overall ranking for that perspective. Adding the values attached to an alternative in the overall rankings of each of the perspectives, we establish a social valuation for that alternative. Repeating this for all the alternatives, we get a social ranking.

This is deficient on several counts. The social rankings established are intended to vary with the numbers assigned to the alternatives in the individual rankings. But as things stand, the connection is too close. If we number four alternatives 4, 3, 2, 1, we obtain one set of overall rankings and a corresponding social ranking. If we number the alternatives *5*, 3, 2, 1 (to give more weight to first preferences), we may get different overall rankings and a different social ranking. If we number the alternatives *5*, *4*, 2, 1 (to stress the top two alternatives), we may get still another social ranking, etc.[12] We must decide on some specific numbering-policy before we can proceed, and at the present stage of our analysis this can only be done arbitrarily.

The procedure moreover treats all conditional rankings equally. It assigns no priority to our condition*ed* ranking(s) and thus ignores our actual preferences over the social alternatives. It does not distinguish the

rankings that we might wish were conditioned from those we would rather were not, and thus ignores our reluctancies. (The Fifth Avenue parades case and the case of the segregationists remain unaccounted for.) And it does not distinguish the rankings that are well-founded from the rankings founded upon falsehoods. (Our Munich crisis case also remains unexplained.) All in all, this procedure fails.

The second procedure requires the notion of a *predisposition to favor* certain rankings over others. Consider two of our conditional rankings. In each, conjoin the proposition on which these preferences are conditional to each of the alternatives ranked. This generates two new rankings. If each item in one of these new rankings is either preferred or indifferent to the item conjoining the same alternative in the other, and at least one item in the former is preferred to the item that corresponds to it in the latter, then we are *predisposed to favor* the first conditional ranking over the second. (If our information supports one of the propositions on which the conditional rankings are founded better than it does the other, we may be disposed to favor the ranking founded upon the better-supported proposition, but we remain – now for most purposes ineffectively – *pre*-disposed to favor the first ranking.)

The simplest possible case: let there be only two social alternatives, p and q, and suppose that Jones prefers p to q conditionally upon Smith's preferring p to q and that he prefers q to p conditionally upon Smith's preferring q to p, and suppose also that Jones has no other nonvacuously dependent preferences. Let Jones prefer p-in-the-context-of-Smith's-preferring-p-to-q to p-in-the-context-of-Smith's-preferring-q-to-p and let him be indifferent with regard to q-in-the-context-of-Smith's-preferring-p-to-q and q-in-the-context-of-Smith's-preferring-q-to-p. Then Jones is predisposed to favor his ranking conditional upon Smith's preferring p to q to his ranking conditional upon Smith's preferring q to p. (If Jones believes that Smith prefers q to p, then he too prefers q to p, but only reluctantly.)

Now for the procedure itself. Our project here is to identify one or more *optimal attainable equilibrium sets* of rankings, and then to combine the rankings in these sets. Speaking generally: an *equilibrium* is a situation from which none of the people involved is willing to move unless some of the others move too. An *attainable* equilibrium is an equilibrium to the establishment of which those involved are not unanimously opposed. An

optimal attainable equilibrium is an attainable equilibrium to which none other is favored by some and at-least-as-favored by all. The rankings to be considered will all be conditional rankings founded upon dependency-expansions of alterations of dependency-expansions.

We start by noting each person's conditioned ranking (or rankings). Where a person has several such, we single out the one that is founded on the strongest proposition – the one founded on the narrowest alternation of dependency-expansions. This gives us one ranking in every perspective. Call the set of all these rankings S. We now find a set S' such that (*1*) if all the rankings in S' were concurrently conditioned, each would be founded on a true proposition, (*2*) at least one person is *not* predisposed to favor his ranking in S over his ranking in S' and (*3*) every other set S'' satisfying conditions *1* and *2* is such that if anyone is predisposed to favor his ranking in S'' over his ranking in S', then there is also someone who is predisposed to favor his ranking in S' over his ranking in S''. Any set of rankings satisfying condition *1* is an *equilibrium set*. (None of the people involved is willing to believe any proposition incompatible with the one on which his ranking in this set is founded unless some of the others condition rankings other than *theirs* in this set.) Any set satisfying conditions *1* and *2* is an *attainable* equilibrium set. Any set satisfying conditions *1*, *2*, and *3* is an *optimal* attainable equilibrium set.

This is best thought out sequentially. We first find some set of rankings that satisfies conditions *1* and *2*. We provisionally endorse this set, and see if there may not also be another set of this sort such that at least one person is predisposed to favor his ranking in it over his ranking in the provisionally endorsed set and no one is predisposed the other way. If so, we substitute this set for the one previously endorsed, and go on to look for opportunities for further moves in the same direction. When every set satisfying conditions *1* and *2* has been considered, the set last endorsed is an optimal attainable equilibrium set.

There is always at least one optimal attainable equilibrium set. (The set of the rankings founded on tautologies is always a set of this sort.) There may well be more than one such set. (Several sequences of moves with different terminal points may be possible.) Let us call a ranking in an optimal attainable equilibrium set an *ideal ranking*. If there are several such sets, there are several ideal rankings in some of the perspectives. Within each of these perspectives, we conflate these rankings by the

numbering-and-averaging technique of our earlier procedure. This yields a final set of rankings, one for each person involved.

It remains to tie these together. We first number the alternatives in those of these rankings that are not yet scaled. We than add the numbers attached to an alternative in all these rankings, establishing a social valuation for that alternative. Repeating this for all the alternatives, we get at last a social ranking.

There are some negative remarks to be made about this procedure. The first is that it cheats. We set out to attend to the perspectives of the people involved, and to nothing but these perspectives. But here we consider not only these perspectives but also the contexts in which they obtain. At the very first step, we isolate each person's conditioned ranking(s) of the social alternatives. A knowledge of the perspectives alone does not tell us which these are. And in identifying predispositions to favor certain rankings, we take note of each person's preferences with regard to conjunctions of social alternatives and the propositions on which the rankings in his perspective are founded. Our procedure is not perspective-oriented. It obliges us to attend to perspectives, but also to much else besides.

A second point is that in incorporating the numbering technique, this procedure is subject to the same charge of arbitrariness we made against the procedure we have rejected. I can see only one way out. This is to adopt an interval measure of preferability, a utility-scale with the same upper and lower bounds for everyone, and to number the social alternatives in the individual ideal rankings in accordance with the person's utilities for the conjunctions of these alternatives with the propositions on which the rankings are founded.

There is nonetheless a hitch here. To establish a utility-scale with the same upper and lower bounds for everyone, we must identify, for every person involved, the propositions he sets at the two extremes. These need not be among the social alternatives. They need not even be among the conjunctions of social alternatives and the propositions on which the various ideal rankings are founded. On most analyses of utility-measurement, we may indeed have to take note of people's assessments of still other ostensibly extraneous propositions before all the rankings in every perspective are fully ordered in terms of utilities, where these assessments moreover are not made in terms of categorical preference but in

terms of bare differential liking. This if we adopt utility-scaling we must go even further beyond a perspective-orientation than we have already acknowledged. Our procedure obliges us to identify not only each person's perspective, his conditioned ranking(s) of the social alternatives and his preferences with regard to the conjunctions described. It obliges us to take account of all of his basic comparative assessments – a comprehensive package, for from this set of assessments plus certain of his beliefs about the preferences of others the person's perspective and all the rest of what we need can be determined.[13]

These remarks suggest that we revise our principles of democracy one more time. Let me refer collectively to all of a person's basic comparative assessments and his beliefs concerning those preferences over the social alternatives of the other people involved on which (or on the propositions about which) his own preferences over the social alternatives depend as his preference-*situation*. A democrat may be considered to be committed to the view that nothing but situations are ever to be counted. Call this the principle of *situation-orientation*. The procedure above is a decision-policy for a situation-oriented democracy. It aggregates perspectives, but it sees perspectives in their situational contexts.

This principle is promising. A situation-oriented democracy can be sensitive to interdependencies in ways that a perspective-oriented democracy cannot. A perspective-orientation allows for a consideration of what our preferences would be if we believed that other people had these or those preferences. A situation-orientation goes further. It allows for a consideration of our preferences for alternatives in one social context over the same (and other) alternatives in different such contexts. And it allows for a consideration of what we believe the actual context to be. Thus it provides for a consideration of our reflections on what would make for a better social climate, indeed even for a consideration of our utopian reflections. A situation-orientation also provides for the measurement of intensities of feeling, and so for a consideration of differential intensities with regard to the same alternatives. It makes for the view that a democracy may on occasion let a passionate minority overrule an apathetic majority. It seems to me that a situation-orientation is sound. I am, at any rate, content with it.

Our principles of nondictatorship and Pareto-optimality also call for one last revision. The final principle of nondictatorship says that no

proposition may be socially ranked above another whenever some specific person *assigns a greater utility* to the first than to the second, regardless of *the utility-orderings*, in any ranking of anyone else's perspective, of these two propositions. Our final principle of Pareto-optimality says that if a proposition *is assigned a greater utility* than another in every ranking of every perspective, then the first proposition must be socially ranked above the second. (This last revision of Pareto-optimality is for uniformity's sake only; it makes for no substantive change.)

The decision-procedure above now looks right. It generates consistent social rankings and provides for unique social choices in every context of consistent individual preferences and it accords with our three final principles of democracy. It is indeed an elaborate affair, but no more so than it need be. Its sequential character reflects the way in which decisions are in fact often worked out. We often start by taking a stand on the alternatives at issue and proceed from there in the light of what we learn about the preferences of others, and about what their preferences would be if they came to see that we had revised ours. The eventual compromise is seldom implicit in the initial confrontation. It is arrived at after a succession of reevaluations on the part of those involved. At least, it should be worked out that way in a democracy. The procedure described develops all this in detail.

Variants might be suggested. We might consider rethinking the rankings in terms of utilities at the beginning of the procedure rather than halfway through. But if the point here is to avoid having to work with two distinct concepts of preference, this change would make for little improvement, for the dependency-expansions on which the new rankings would be founded would remain conjunctions of categorical preference- (and indifference-) propositions. A more promising suggestion would be to use the simpler concept of preference exclusively from the outset. (Or, for that matter, to work directly with utilities, conditional utilities, dependent utilities, etc.) This would call for changes all down the line. Dependency-expansions could no longer be conjunctions of singular propositions. (We banked on categoricity in our reduction of nonsingular dependencies to singular ones.) Perspectives could not be understood as we have been understanding them. And the decision-policy adopted could not be the one we proposed. But one might perhaps develop a different policy embodying the basic idea of our procedure above.

Note that there is nothing radically new in that idea. Our procedure is a generalization of two classical approaches. The idealist philosophers held that there is a consensus on every public issue, though our limited insight may keep us at first from identifying it, and that this consensus is the social ranking. The function of the give-and-take of everyday politics is to uncover this underlying unaminity.[14] An idealist might accept our procedure as a formal outline of the course such negotiations ought to take, adding only that since the ideal rankings determined will, on his supposition, all be the same, the procedure after that point is vacuous. The utilitarians held (or argued as if they held) that no one maintains any dependent preferences whatever, and that the sum of the utilities (or of the normalized utilities) of an alternative for the various people involved is the social utility of that alternative.[15] The utilitarians might take up our procedure at the point at which the idealists would drop it. From their point of view, it is the part of the procedure prior to the determination of the ideal rankings that is vacuous.

Neither the idealist nor the utilitarian position is altogether adequate, for both focus on special circumstances. Only very rarely can a public debate be expected to lead to full agreement, and very rarely is each person involved indifferent to all the others. In the typical case, the situation is stickier, and our procedure cannot be curtailed. But we can think of our analysis as a comprehensive theory, and see the idealist and utilitarian positions as corollaries having to do with limiting cases. Our discussion incorporates the classical insights, and goes beyond them. In this sense, it is a generalization of earlier work.

Now to conclude. I have proposed answers to the two questions about democracy raised at the beginning of this paper. What is to be counted is preference-situations, and these are to be counted by the procedure set forth. I shall leave the matter there. But some qualms are bound to remain. For what can anyone do with this? A theory of democracy should have some practical bearing. How does this theory help to resolve the issues of actual societies?

The answer here is disappointing. Our analysis has no direct applications. The elaborateness of the procedure proposed is not the difficulty. A computer could be programmed to do the job. The problem is that we shall never have the information about people's preferences this computer would have to be fed. We shall never even be in a position to make

intelligent conjectures about all these preferences. So our procedure will never yield social decisions.

The analysis does nonetheless have a practical bearing. If the analysis is accepted, we can turn to a study of our actual decision-policies with a clearer sense of the ideal we should like them to approximate. This must, in particular, give us a new appreciation of provisions for the public discussion of issues and for periodic voting. An open forum allows for an accommodation of preferences, and a vote of some appropriate sort provides for a compromise of the differences that remain. Thus these arrangements reflect the purposes of the two broad phases of our procedure. Unhindered discussion followed by a vote does not guarantee democracy. The unscrupulous debater and the shrewd voter often have an advantage.[16] But if our analysis is sound, then the freedom of speech and the freedom to vote may be indispensable. At least, if that analysis is accepted, we can see one reason (not, of course, the only reason) why they might be thought so.

Our analysis also has a second sort of pertinence to politics. For it underwrites practices that might meet with more favor if people thought them compatible with democracy. Deciding an issue as a minority wishes has always been thought undemocratic. So also has deciding in accordance with anything but the actual preferences with regard to the alternatives. The analysis of democracy proposed above goes against all such simple judgments, and so allows democrats a greater range of options than they think they have. It can never tell them what they ought to be doing. But it lets them do more of what they want to do.

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NOTES

[1] The shortcomings of the majority rule were discovered in the eighteenth century by Condorcet and rediscovered in the nineteenth by Dodgson (Lewis Carroll). The history of the subject is surveyed by Black [3].

[2] Then again, all of them may not be safe. For a study of one that very likely was not, see Riker [17]. For analyses of the scope of the applicability of the majority rule, see Sen [19] and Pattanaik [15].

[3] I am focussing here on Arrow's revised proof. See [2], pp. 97–100. (Arrow refers to the principle of preference-orientation as the principle of the *independence of irrelevant alternatives*.)

[4] Other analyses are possible. In [18], I argued that Arrow is working with too demanding a conception of consistency. (His concept involves the transitivity of indifference as well as the transitivity and asymmetry of preference.) But Hansson [7] has shown that Arrow can make do with my weaker concept if he strengthens the principle of non-dictatorship.

[5] See [1], p. 19.

[6] The argument that follows is taken from Fishburn [6]. (Fishburn draws a different conclusion.) A similar argument is offered by Hildreth [11]. See also Hansson [8].

[7] The concern with rankings can be traced to Borda in the eighteenth century. For an analysis of Borda's position, see Black [3].

[8] This is not intended as a definition. I offer a definition of categorical preference in terms of a more primitive concept of preference in [18], p. 134. (I now think this definition unduly restrictive.) For a slightly different analysis, see von Wright [21].

[9] Buchanan and Stubblebine [4], p. 372.

[10] Economists sometimes concern themselves with the effects of altruism or its absence.

See Arrow [2], pp. 18 and 61 ff. Other-directedness is studied primarily by sociologists. The basic discussion is in Riesman [16]. The pioneer work on this subject is Veblen [20].

[11] This in turn should perhaps be strengthened along the lines of Hansson [7], but nothing in what follows is affected by whether or not we take this additional step.

[12] The variability of the orderings of sums of ranking-indexes is noted by Murakami; see [14], pp. 65–66.

[13] I discuss the connection between a person's categorical preferences and his basic assessments in [18], pp. 133–34, where the latter are referred to as *pure* preferences.

[14] This is the tradition of Rousseau. No contemporary author takes quite this line. But political philosophers often describe the democratic process as the reconciliation of differences and the establishment (rather than the discovery) of a consensus. Lindsay's analysis [13] is perhaps the most lucid example. Political scientists also sometimes discuss the institutions of democracy in these terms; see Lindblom [12].

[15] The gist of this idea goes back beyond Bentham. For a recent formulation, see Harsanyi [10].

[16] For the strategic intricacies of voting, see Farquharson [5]. The strategic opportunities of debating are simply those of deception.