The Reception of Social Choice Theory

by Democratic Theory

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Abstract: An "antipopulist" interpretation of social choice theory came to prominence in the 1980s. The replies of normative democratic theory to the challenge were indirect. The pluralist democrats argued that the pervasive cycling claimed by the antipopulists is good rather than bad for democracy. The epistemic democrats argued that voting could be vindicated as a procedure that approximates some independent standard of justice. The deliberative democrats argued that deliberation could attenuate the alleged social choice problems. The rejectionist democrats argued that social choice theory is irrelevant to the understanding of rationality and of democracy, and even of voting rules. This essay argues that, although each of the indirect replies is savvy and sophisticated, none is sufficient to overcome the antipopulist interpretation. A direct reply rejecting the antipopulist view allows democratic theorists to resume consideration of the meaning and value of democratic voting.

Introduction. Normative political theory was almost dead in the 1950s and 60s. Participation was the leading practice of democracy in America and Europe in the 60s and 70s. Mass participation was appropriate in an extraordinary political era, but it was not a stable foundation for political practice in the representative democracies. There was a participatory theory, but it followed rather than led practice, and it was underdeveloped by today's standards. Rawls' *Theory of Justice* (1971) revived normative political theory, but was much more liberal than democratic. Emerging democratic theorists wanted to treat democracy with the same seriousness and rigor as Rawls had treated liberalism.

As they worked through graduate school and entered their careers they encountered an American political science discipline which, via Schumpeter, had inherited aristocratic disdain for the democratic ideal. Part of it was exhaustion with depression and war, and fear that democratic sentiments had contributed to left and right totalitarianism when liberalism had resolutely stood against them. Dahl's pluralism was nonparticipatory, but his democratic theory was a haven. It was soon encircled by rational choice theory, however. And rational choice theory, perhaps with Arrow, but certainly under the leadership of William Riker's Rochester school as it rose to dominate the discipline in the 80s, denied value to voting. Riker's (1982) *Liberalism against Populism*, which declared democratic voting impossible, arbitrary, and meaningless, approached the status of orthodoxy. Any normative democratic theorist inquiring into the meaning and value of democratic voting encountered a logical and empirical behemoth howling that any such search is futile.

The antipopulist interpretation, influential in Anglophone political science, but by no means endorsed by all social choice theorists, holds that the outcomes of democratic voting are arbitrary and meaningless (Riker 1982). The interpretation says, first, that cycling of outcome is a problem for any Condorcet voting rule. Second, such cycles could allow the collective outcome to be arbitrarily path-dependent and subject to agenda control. Third, strategic voting is always possible, again allowing for arbitrary outcomes, and obscuring the true preferences of voters. Fourth, different voting rules may arbitrarily pick different outcomes from the same profile of individual preferences. Fifth, these problems render it impossible to infer voter's actual preferences from aggregate voting outcomes: if aggregation were fair and accurate we could not know that it is.

The same school of thought also assumes that voters are motivated only by self-interest, that it is almost always irrational for any individual to vote because none is decisive to the outcome, and that because of such lack of decisiveness citizens are rationally ignorant. These further claims, also contested by Mackie (forthcoming), are widely accepted by political scientists and political theorists.

If democracy is good, and if voting is bad, then there must be something else that is good about democracy. Habermas' *Theory of Communicative Action* was published in German in 1981, and in English in 1984 and 1987. In the same years that American science belittled the value of voting, European philosophy extolled the value of discussion. The collision resulted in a largely deliberative democratic theory, wherein voting is, at best, an afterthought to the fact that reasonable people in the actual world fail to reach consensus on political choices. To speak of the nobility of deliberation, ideal

deliberation anyway, would be applauded, but to speak of the nobility of voting, even ideal voting, would evoke laughter or, worse, pity. I do not mean to commit the genetic fallacy against deliberative democracy. What is correct about it is intrinsically correct, all I say is that the intellectual history of its emergence might account for a pattern, not of error, but of neglect of the conceptual and normative aspects of voting.

The antipopulist interpretation of social choice theory was radical and shocking. Its difficult logical and empirical claims about voting became unthinkingly authoritative in some quarters. Those who would challenge its pessimism lacked, in early years, an accumulation of findings that would allow direct challenge to the doctrine. The replies of democratic theory were indirect, and fell into roughly four camps (neither exclusive nor exhaustive). The pluralist democrats argued that pervasive cycling is good rather than bad for democracy. I respond that if there were a good of more minority winners due to cycling, it would be outweighed by the bad of arbitrary and extremist outcomes due to cycling. The epistemic democrats argued that voting could be vindicated as a procedure that approximates some independent standard of justice. I respond that, if correct, the epistemic account would still not defeat the antipopulist interpretation. The deliberative democrats argued that deliberation could attenuate the problems identified by the antipopulist interpretation. The argument is empirical, and I respond that it is possible that deliberation would not sufficiently attenuate such problems, and that mechanisms other than deliberation may do so as well or better. The rejectionist democrats argued that social choice theory is irrelevant to the understanding of rationality and of democracy, and even to the understanding and evaluation of democratic voting rules. I respond that it is correct to reject social choice as a total theory, but that what it has to say

about voting rules is indispensable, and should be correctly interpreted. Finally, I argue that, unlike geometry, the axioms of social choice theory are controversial and exceptionable, and thereby mislead. The essay concludes that, although each of the indirect replies is savvy and sophisticated, none is sufficient to overcome the antipopulist interpretation. A direct reply rejecting the antipopulist view allows democratic theorists to resume consideration of the meaning and value of democratic voting.

For the sake of brief exposition, this essay assumes that the alleged problems of voting are now, through direct challenge, largely resolved. Arrow's independence of irrelevant alternatives condition is not adequately justified in the abstract (Mackie 2003, 123-157; for the contrary view, see Dowding 2006), and in the concrete is rejected by almost all human subjects in behavioral social choice experiments (Davies et al. 2006). Cycles are absent or trivial among the preferences of mass voters (Mackie 2003, 86-92; Regenwetter et al. 2006); and are centrist in theory (Bianco et al. 2004) or empirically undemonstrated in actual legislatures (Mackie 2003, 197-377; see also Tideman 2006, 93-115). Thus, path dependence and associated agenda control are of limited importance, and further could be remedied by equality of access to the agenda. Strategic voting is a boon, not a bane, in that it confines otherwise chaotic outcomes to a central region in issue space (Bianco et al. 2006). The commonly used voting rules diverge in contrived examples, but tend to converge in choice and ranking when applied to real voter preferences (Mackie 2003, 44-71; Regenwetter et al., forthcoming). Voters' actual preferences are approximately knowable because it is an error to conclude from the claim that undetected manipulation is possible in any one instance of voting that undetected manipulation is possible in all instances taken together, and because the potential for

manipulation is much exaggerated in the first place (Mackie 2003, 37-43).

The Pluralist Response. The pluralist response to the antipopulist account is that majority-rule cycling is good for democracy. The pluralist theory of democracy holds that a certain pattern of political preferences in the population – multiple cross-cutting cleavages – contributes to regime stability. Yet, says Nicholas Miller (1983), this dispersed pattern of preferences is the one most likely to entail majority-rule cycling and thus instability among collective choices. However, he concludes, the generic instability of majority-rule voting adds to the stability of the democratic regime.

In a differentiated society, an individual chooses or is born into a wide variety of crosscutting affiliations. In an undifferentiated society, however, one's family, residence, occupation, spouse, recreation, religion, and political party affiliations are inside the same group, are reinforcing; and compromises are difficult between one reinforcing group and another. Pluralistic preferences contribute to stability in four ways. First, the pattern moderates individual attitudes: an individual with multiple crosscutting affiliations is less likely to have extreme or intense preferences for, say, his ethnic loyalty than a person with reinforcing affiliations. Second, the pattern moderates individual actions: even if attitudes were unmoderated, one's enemy on one issue would be one's friend on another issue. Third, the pattern distributes political satisfaction: rather than always winning or always losing, a pluralized individual, for example, could lose on many Sierra Club issues but win on many Republican Party issues.

Fourth, adds Miller, the generic instability of majority rule voting creates stability for the democratic regime. For many years, the likelihood of cycles was estimated by assuming an "impartial culture": all linear orders of preferences are equally

likely. Under the impartial culture assumption, the likelihood of cycles *increases* as the number of voters increases. A pluralistic society with cross-cutting preferences contains a wider variety of preference rankings among individuals than does a nonpluralistic society with reinforcing preferences. Therefore, cross-cutting pluralist preferences approximate the impartial culture, and the probability of cycling majorities is high in a pluralist polity, according to Miller (1983). Further, an electoral loser who has a prospect of winning in the future is more likely to acquiesce to the regime than an electoral loser who has no prospect of winning in the future. Some alternation between winners and losers in successive elections is observed in ongoing democracies. One reason majority coalitions might alternate over time, I say, is that voters' preferences *change* from election to election, due to changing country conditions such as recession or war, failure of majority policies to yield expected outcomes, incompetent administration by the incumbents, and so on. Miller offers another hypothesis: citizen preferences are *constant* from election to election, but parties alternate due to cycling. The standard pluralist view is that individuals and groups acquiesce to the regime in part because each wins and loses *on different issues*. Miller says, that with pluralistic preferences, cycling is typical, and with cycling present losers on a particular issue can also hope to become winners *on the same issue*.

In a two-dimensional issue space, the point most responsive to voters' preferences is the intersection of the median voter's position on one dimension with the median voter's position on the second dimension, at the center of the cloud of voter ideal points (an ideal point is the combination of policies that a particular voter most prefers). Generic instability claims that majority rule is not stable at this point, that an agenda can

lead by a sequence of majority votes to any other point in the issue space, even those at the extremes. Any minority can win, on this account, but that is the same as a voting rule that chooses an outcome from anywhere in the issue space by arbitrary draw, even the most minoritarian and extreme. It seems to me that such an arbitrary democratic process would be as threatening to regime stability as would an arbitrary authoritarian process.

Miller concludes his essay with a response to this worry. Generic instability assumes myopically sincere voters, but, if citizens are strategic voters, then in many democratic environments enactable majority rule outcomes fall in a region near the center of the ideal points; Miller (1980) himself had just identified the "uncovered set" as one such solution concept, and it has recently gained importance in the literature (Bianco et al. 2004, 2006; Miller 2007). See Figure 1., which illustrates inferred ideal points of Representatives in the U.S. House. The horizontal axis corresponds to the left and right dimension of politics, and the vertical axis corresponds roughly to the regional dimension, north or south. The Democrats are the cloud in the northwest portion of the diagram, and were the majority party in the 101st Congress (1989-1990), and the Republicans are the cloud in the southeast portion and were the majority party in the 106th Congress (1999-2000). The intersection of the medians is very near the center of each diagram. The uncovered set is the smaller cross-hatched region at or near the center, and adequately predicts recent Congressional outcomes (Bianco et al., 2004).

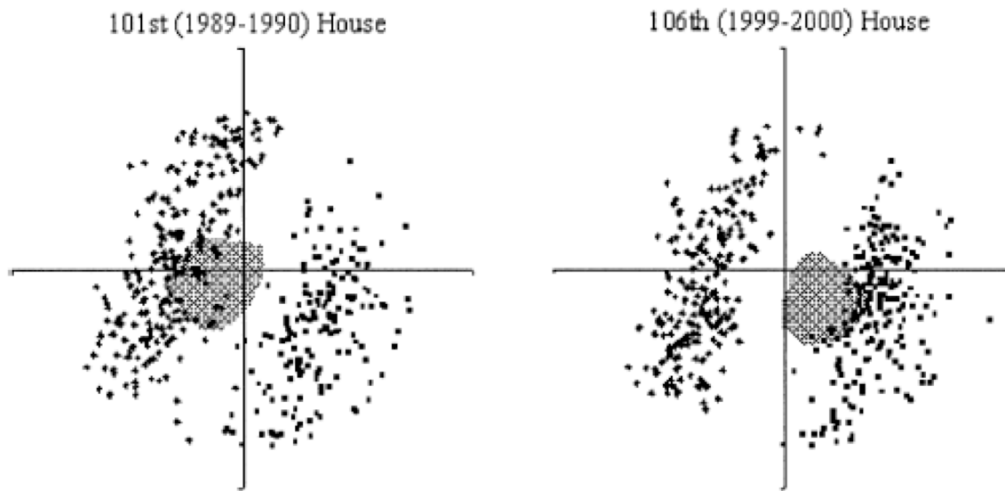101st (1989-1990) House   106th (1999-2000) House

Figure 1. Ideological location of U.S. Representatives based on voting record, and the

uncovered set. Source: Excerpted from Figure 5, Bianco et al. (2004, 268).

      I argue that the pluralist response can't have it both ways: either cycling is

generic and any extreme minority can go from loser to winner on the same issue, or

outcomes are limited to a small central region such that any cycling is amongst centrist

alternatives and almost no minority can go from loser to winner on the same issue (at

best, an extreme minority has the opportunity to belong to a majority coalition

constrained to select a centrist outcome). Perhaps for losers to be able to become winners

on the same issue creates some satisfaction with a democratic regime, but this implies

that outcomes on issues would be arbitrary and contrary to majority preferences, and that

would create far more dissatisfaction, I submit. In the absence of cycling, the benefits

identified by standard pluralism would still stand: because individuals in a pluralistic

society are less likely to have extreme or intense preferences, the range of preferences on

any dimension of concern is likely to be narrower than in a nonpluralistic society, and the

number of individual preferences near the center on any dimension is likely to be larger.

And turnover of majority coalitions, if desirable, is possible even in the absence of cycles. Suppose five voters in a two-dimensional issue space, their ideal points arranged like the five-pip face of a die. The voter in the center can form six different three-member coalitions with the remaining four voters, but each coalition would make the identical centrist social choice. This is illustrated in Figure 2., which shows four of the six coalitions (the remaining two, omitted to reduce clutter, are the three vertical voters and the three horizontal voters). The extreme voter can enjoy being a member of a majority coalition which is nevertheless constrained to enact majority outcomes, or at best nudge the outcome a smidgen in her direction.
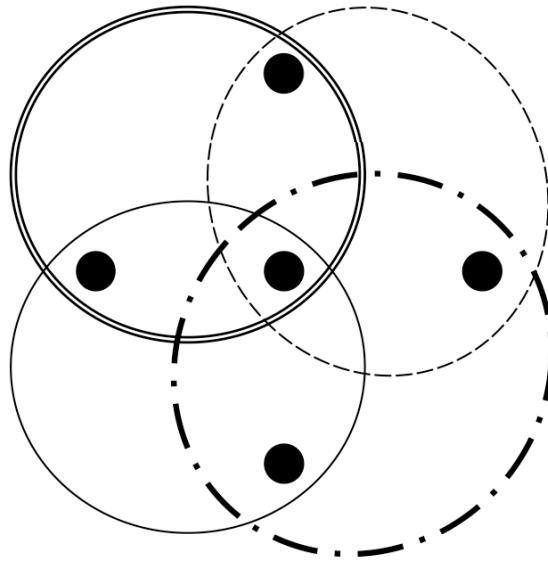

Figure 2. Coalition turnover in the absence of cycles.

Much has been learned since Miller's 1983 essay. It turns out that the impartial-culture assumption is the one that maximizes the probability of cycles: the slightest

departure from it causes the likelihood of cycles to *decrease* as the number of voters

increases (see Regenwetter et al. 2006; List and Goodin 2001, Appendix 3). Impartial

culture is also an unrealistic assumption: given that humans live in the same world and

are of the same basic nature, even in a heterogeneous actual society there would be some

correlation among individuals' preference rankings (particularly among issues of more

common concern, such as peace, prosperity, basic rights). Next, applications of Miller's

uncovered set languished, because it resisted analytic definition. That changed in 2004

when Bianco et al. found a way to calculate an estimation of the uncovered set for voters

with Euclidean preferences in two-dimensional issue space. If preferences are distributed

normally on each dimension (such that there are more voters at the center on any

dimension, as there is likely to be under pluralist conditions), then as the number *and*

diversity of ideal points increases above about nine voters, the size of the uncovered set

decreases to a region that is a central point for practical purposes, even with only 435

voters (Miller 2007, 15). Cycles should be absent or trivially centrist among the

preference rankings of mass voters, and these theoretical expectations are consistently

supported by measurements of the preferences of real citizens (see Mackie 2003, 86-92;

Regenwetter et al. 2006).

      Mass voters elect legislators, legislators are affiliated with parties, and parties

structure legislatures. Because their ideal points are fewer and less diverse, the

uncovered set for legislators in an assembly is likely to be larger than the uncovered set

of the voters who elected them.[1] The uncovered set typically occupies a small central

region, but it can be quite sensitive to the location of ideal points (Bianco et al. 2004).

The uncovered set can be larger in a polarized two-party system such as the U.S.

Congress, illustrated in Figure 1. Other majority-minority configurations in theory and

experiment also show outcomes majoritarian but accommodating of the minority (Bianco

et al. 2006).

Previous voting experiments (human subjects were assigned various ideal points

by researchers, and each was rewarded for how close the majority outcome came to her

ideal point) in what was once called "chaotic" issue space, contrary to prediction, found

collective outcomes falling around the center of the issue space, but no known theory

consistently accounted for the findings. Bianco et al. (2006) apply the uncovered set to

these data, and find it an efficient predictor (93%) of the diverse experiments' majority-

vote outcomes. The uncovered set was quite large in some of these experiments because

ideal points assigned to subjects were arranged as if on the circumference of a circle in

two-dimensional issue space, an unrealistic assumption. The uncovered set shrinks back

to the center with the more realistic assumption of at least a few centrist ideal points.

They also find that outcomes are more likely to be towards the center than the boundaries

of the uncovered set, suggesting "some internal structure we are not yet able to explain"

(848). Purely divide-the-dollar controversies would have an uncovered set about as large

as the collection of ideal points, suggesting instability, but in some legislatures they tend

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[1] Legislators' preference rankings, just by the luck of the draw, may not be a perfectly representative sample of voters' preference rankings, and this neglected issue may reduce the representativeness of a parliament more than the obsessively discussed cycling issue, according to Regenwetter et al. 2006, 175-185.

to be settled stably by a universalistic coalition, one explanation for which could be a direct concern for fairness (Mackie 2003, 199-213). Empirical observations of stable centrist outcomes now have stronger theoretical support, but there is still much to learn about real legislative voting behavior.

The pluralist response to the antipopulist interpretation attempts to make a silk purse of a sow's ear. If majority-rule voting were generically unstable the benefit to regime stability of losers becoming winners on the same issue would be outweighed by the cost of arbitrary and majority-opposed outcomes, however. Fortunately, there is no sow's ear to pretty up, as the case for generic instability does not stand.

The Epistemic Response. For epistemic democrats, even if the Rikerian interpretations of social choice theory were correct, democratic voting may yet be vindicated as a procedure helping to imperfectly approximate an independent standard of justice. Democracy has both procedural value and outcome value (Christiano 2004): one wants a *fair* procedure, and of the fair procedures, the one that although imperfect is the most *accurate* in satisfying some independent standard of correctness (Estlund 1997); just as one would want a criminal justice system that is fair, treating suspects equally for example, but of the fair systems one would want the one that although imperfect is the most accurate at identifying guilt and innocence (Rawls 1971, 85-86).

Riker contrasted his correct liberal interpretation of voting to the mistaken populist interpretation of voting. The liberal interpretation is that it must be possible for voters to remove officials, as, it is claimed, that would protect negative liberty, but, he insists, there is no correctness about voters' choice to remove an official (Riker 1982, 242-244; Mackie 2003, 411-417). Riker believes that for the populist only a purely

procedural justification of voting is possible. Thus, according to Riker, the populist holds

that voting *uniquely defines* the general will. A particular voting rule is defined by the

conjunction of some of the various axioms of (alleged) procedural fairness; and, among

the plethora of axioms and resultant voting rules there are no persuasive arguments that

would identify any one voting rule as uniquely superior. Further, if the voting rule is

Condorcet, a rule that considers alternatives pairwise, then the outcome may cycle, such

that there is no unique social choice. Next, if we go to rules that accept more than

pairwise rankings, and thus do not cycle, it can be shown by blackboard example that

there exist logically possible profiles of individual voters' preferences for which different

democratic voting rules each yields a different outcome, again such that there is no

unique social choice. Since democratic voting does not always uniquely define an

outcome, populism is a mistaken creed.

Coleman and Ferejohn (1986) respond that this purely procedural definition of

the general will need not be held by the populist, and Cohen (1986) adds that he can think

of no theorist who holds such a view. Coleman and Ferejohn say that it is possible for

the populist to hold the view that democratic voting (together with other appropriate

institutions) *approximately evidences* the general will, the general will being some

independent standard of correctness. Rather than a unique choice or ranking, democratic

voting may at times yield a confined range of outcomes. Further, those actual outcomes,

whether range or point, imperfectly evidence rather than just define the correct outcome.

Finally, there may be no correct outcome for some categories of electoral decision; if so,

failure of voting rules is not a concern (then, what counts is that one or another arbitrary

convention be agreed on as an outcome). For the *epistemic populist*:

The general will is characterized in terms of an ideal procedure of deliberation or collective choice, while democratic decision making is construed as an imperfect procedure which, when suitably organized, has the property of providing evidence about how best to achieve the object of the general will.   (Cohen 1986, 32)

The assessment of *democracy* requires a dualistic account, of both its procedural and its outcome values, I have said. How to assess properly *democratic voting rules* is, however, a separate question. There is an infinite number of aggregation rules, and they can be used for many purposes, nonpolitical or political, nondemocratic or democratic.[2] Many rules are useless, many are silly, and many are evil. That the leader of the people should make all decisions is an aggregation rule. That the Central Committee of the Communist Party by unanimous vote should make all decisions is an aggregation rule, and it is epistemic in that the highest party members have been selected by the forces of history for their superior understanding of Marxism-Leninism, the only true doctrine. We need to sieve out the democratic voting rules from the infinitude of possibilities.

For the moment we shall consider only the voting rule, and not the entire complex of values and institutions that make up the actual modern liberal representative democracy. There are many relevant desiderata to be considered in choosing a practical voting rule (see Tideman 2006). There are two essential criteria for a *democratic* voting rule, according to Dahl (1956, 37). First, *political equality*: "the preference of each member is assigned an equal value." Second, *popular sovereignty*: "the alternative selected and enforced as government policy is the alternative most preferred by the

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[2] There is an infinite number of voting rules if we include the positional ones (such as the Borda count).

members." My purpose in this essay is not to justify these widely endorsed values, but to identify and to clarify them. Call the first criterion *equality*. Dahl goes on to say that the only voting rule compatible with the second criterion of popular sovereignty is majority rule over two alternatives. This is mistaken, for three reasons. First, Dahl believes that May's theorem warrant this conclusion, an idea I criticize closely in the penultimate section. Second, democratic decision almost always is over more than two alternatives, if not explicitly then implicitly. Majority rule is not an adequate voting rule for more than two alternatives, because it's quite possible that no one of the three or more alternatives would gain a majority of votes. A dozen or so democratic voting rules are useful extensions of majority rule over two alternatives – rules such as plurality, Condorcet, Borda, single transferable vote – but each has its advantages and disadvantages, and under some of these rules the alternative "most preferred by the members" is not the one preferred by a simple pairwise majority of them. An example is shown in Table 1. Faction *X* first-ranks alternative *A*, second-ranks alternative *B*, and so on. One natural extension of majority rule, the Condorcet method (pairwise majority voting), would select alternative *A*, even though 49% of the voters rank *A* last, and 100% rank B second-best or first-best. Another natural extension of majority rule, the Borda count, would select alternative *B* as most preferred, even though pairwise 51% of the voters would select *A* over *B*.

Table 1. A Voter Profile

	X – 51	**Y – 35**	**Z – 14**
1st	A	B	C
2nd	B	C	B
3rd	C	A	A

Third, also arising from the fact that democratic choice involves more than two alternatives, suppose in a four-candidate plurality election that the two leading candidates are so close in votes, that mistakes in counting could tip the outcome to one or the other, and that there are two fringe candidates each with a handful of votes. Suppose further that the winner of the election wins the most counted votes but the other leading candidate obtains the most actual votes. Although the mistaken win is disappointing, it would be outrageous if the voting rule selected one of the fringe candidates. It's not just simple majority we care about, it's also important to us that the voting rule select one or the other of the two leading alternatives rather than either of the fringe alternatives.

The median voter model says that the median voter in a majority rule decision over one dimension of concern determines the equilibrium outcome. If there are several dimensions of concern, then the corresponding point of interest is the intersection in multidimensional space of the median on each dimension. The theorems made so much of by the antipopulist interpretation say that pairwise majority voting (the Condorcet rule) is not in equilibrium in more than one dimension (e.g., McKelvey 1979). As we have seen, however, the range of social choice shrinks back towards the intersection of medians, if one allows individuals the capacity to vote strategically, and there is no reason to deny them that capacity. The Borda count would yield a point at or extremely near the intersection of medians, and would be in equilibrium, although it has flaws of its own (as do all proposed democratic voting rules). Either of these natural extensions of majority rule would choose an alternative quite close to the center of the issue space, even though the chosen alternative might in pairwise comparison be slightly preferred to another alternative quite near to it. Thus, instead of calling the second criterion *majority*,

I shall call it *centrality*.

Equality and centrality are quite intuitive. As Waldron (1999, 114) says, a democratic voting rule gives an equal weight to each person's view, the greatest weight possible compatible with an equal weight for the views of each of the other voters. Centrality picks a collective choice (top alternative or ranking) that is as close as practicable to the choice of the most individuals. One who did not know which voter she would be *under a democratic voting rule* would pick both equality and centrality, I suggest. What should be chosen by hypothetical consensus or some other method as a *standard of justice* is a separate question.

If the antipopulist interpretation were correct, then no democratic voting rule would be able to achieve equality or centrality. Equality is necessarily violated under Condorcet voting, the Rikerian mistakenly believes, because strategic voting and agenda control would permit some citizens greater influence over the outcome than others, such that they can determine an outcome anywhere in the issue space. Equality is necessarily violated in the choice of a voting rule because, the Rikerian mistakenly believes, the democratic voting rules don't converge towards the same central region in the issue space, and thus any particular voting rule would systematically favor some citizens over others.[3] Finally, the Rikerian mistakenly believes, the possibilities of cycling, strategic voting and agenda control, and arbitrariness among voting rules obscure discovery of actual voter preferences, such that if there were some center we would be unable to know

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[3] True, given some distribution of preferences, each point in the issue space could be selected by some voting rule, but this is trivial: suppose my views are well outside the center, and the voting rule is to select my bliss point as the outcome. We favor the *democratic* voting rules because each aims for the center.

whether a vote identified it.

Equality and centrality are what we can ask of a democratic voting rule standing in isolation. The outcome has no connection to an independent standard of correctness without further assumptions. The rankings aggregated by a democratic voting rule could be over judgments or preferences of any kind, for example, a survey researcher could want a summary measure of respondents' ordinally ranked judgments concerning what should be done about Iraq, or a webpage could want to aggregate visitors' rankings of the Grateful Dead performances they liked the most. For democratic political theory, judgments over the common good of the democracy, or preferences over the coordinated action of the democracy, are what is of interest. When might political theory want a democratic voting rule? When joint action is necessary. When the people involved are free and equal. When each involved has in good faith offered reasons for their judgment of the common good, but unanimous judgment does not obtain and reasonable disagreement remains. Or, when the majority judgment is that the issue involved is not one of judgment but of fair compromise over conflicting preferences.

If the judgments of voters over an objective common good are on average better than random, and if those judgments are independent from one another, then we have the happy results of the Condorcet Jury Theorem, that the aggregated collective judgment rapidly approaches certainty as the number of voters increases. If individual judgments were dependent, then, at worst, the social judgment would be the average of all voters' judgments. Young (1988) shows that if the competence of independent voters is better than random, then the Borda count and the Young-Kemeny rule are each excellent truth-trackers, and adds that if truth is not at stake then each is an excellent compromise among

individual preference rankings (and that in practice they would likely report nearly

identical results). List and Goodin (2001), using different methods, show that even the

homely plurality rule is a pretty good truth tracker, but not quite as good as Condorcet,

Borda, Hare, or Coombs, and we can add that each rule is at least a very good

compromise among individual preference rankings. I have said already that the most

mentioned democratic voting rules tend to converge in result, surely because each is a

somewhat different implementation of the same underlying intuition about what should

be chosen for the group given individual rankings, an intuition, I suggest, that involves

notions of equality and centrality. It happens that when equality and centrality are

combined with independent individual judgments on average better than random then the

aggregation tracks the truth. But a democratic voting rule cannot track the truth on its

own, for that it needs independent and competent judgments by voters. If voters' average

competence is worse than random, and this is surely true some of the time, then the

Condorcet Jury Theorem works in reverse, approaching certainty in error as the number

of voters increase, if judgments are independent.

Do we value a democratic voting rule because it tracks the truth? No, we value

it as a voting rule because of its properties of equality and centrality. Neither the survey

researcher nor the Grateful Dead webpage are interested in the truth of the matter, nor in

a fair compromise over common action. Next, turning to democracy, suppose that all

voters are reasonably mistaken about some fact of the matter. Naturally, we do not want

them to err, but would we want, from some celestial point of view, for a *democratic

voting rule* (rather than evidence and reasoning) to reverse their judgments? I do not

think so. We should rather respect the judgments of free and equal persons, which we do

through equality and centrality. Suppose the majority is reasonable but wrongly believes

its view to be correct, and the minority is reasonable and rightly believes its view to be

correct. What authority should decide the question? The answer cannot be those who

happen to be correct, because the problem to be solved is that there is reasonable

disagreement among free and equal persons about who is correct. If the matter is rather

one of fair compromise over preferences, then again equality and centrality are essential.

When we step from the naked democratic voting rule to fully clothed

democracy, we step from equality to fairness, and from centrality to accuracy. The

institutional design of a democracy involves much more than choice of a voting rule, the

so-called populist wants to ensure that "the basic institutions that provide the framework

for political deliberation are such that outcomes tend to advance the common good"

(Cohen, 31). In a democracy, reasons should be given for preferences over common

action, because if such preferences were enacted they would authoritatively control

others. There should be wide rights and opportunities to discuss and debate reasons, in

the broader public sphere and in more narrow legislative deliberations. Departures from

the equality of voting over every issue could be justified to all; for example, in a mass

democracy, election of specialized legislators to limited terms may contribute to

enlargement and refinement of the public view (Federalist #10, in Hamilton et al.,

n.d./1787). Centrality transforms into a tendency towards accuracy if voters' judgments

are oriented to the common good, are competent, and are independent. Cohen (36-37)

remarks that an epistemic populist would not assume that a citizen's knowledge of the

public good would be sufficient to motivate the citizen to vote in its favor, she could be

tempted to vote a private preference contrary to that judgment. The epistemic populist

would evaluate democratic institutions in part on whether they motivate expression of public judgment rather than private preference. He also observes that the judgmental competence of voters plausibly depends on public institutions. I would add as well that the independence of voters' judgments depends in part on public institutions, for example, on such things as whether there is public education so that voters can form their own judgments, or whether the communications media are concentrated or dispersed, or whether there are adequate checks and balances on the propaganda of powerful public and private actors. If it is not possible to obtain an imperfect accuracy from centrality, if there is an orientation more to the private interest than to the public interest, a general incompetence of judgment, or dependence of judgment on a few interested sources, then perhaps the preconditions for achieving democracy are not in place.

The epistemic response defeats Riker's portrayal of the populist as necessarily a pure proceduralist. To the extent that social choice theory is purely proceduralist, the epistemic response weakens it. It does not, however, defeat the antipopulist interpretation, which can stand apart from the purely-procedural controversy. The Rikerian rejects that there is an independent standard of correctness for voting to aim at, and endorses a minimal interpretation of voting, merely that it be possible for an election to remove an elected official (which would protect negative liberty, the argument goes). The Rikerian could concede that there is an independent standard of correctness, but recall that he holds that no voting rule would be able to achieve equality and centrality; thus, no voting rule in combination with public-oriented, competent, and independent judgments would approximate the independent standard. Equality is necessarily violated under the Condorcet rule and in the choice of any other democratic voting rule, in a way

that would not track voter competence, and in a way that would taint the fairness of a compromise. Centrality is not possible, because there is no center in equilibrium under Condorcet, and every alternative democratic voting rule points to a different center. No equality and no centrality means that public-spirited and competent and independent voter judgments would not aggregate to fair and (imperfectly) accurate outcomes. Finally, the Rikerian could admit that there is an independent standard of correctness, but, due to his belief that the perversities of voting obscure the knowledge of citizen judgments or preferences, he would conclude that it cannot be known. The Rikerian would be mistaken on all of these points, but it is not epistemic populism that shows him mistaken.

The Deliberative Response. The deliberative response was first enunciated by David Miller (1992), and was highly refined by Dryzek and List (2003). Van Mill (1996) said that social choice theory demonstrates the arbitrariness and meaninglessness of the rational collective outcomes sought by deliberative democracy. Dryzek and List respond that the two approaches to democratic theory can be reconciled: it is empirically possible that deliberation would ameliorate the problems of voting suggested by the antipopulist interpretation, and therefore democracy should have a deliberative aspect.

Deliberation and voting are necessarily complementary in my view: each improves the other. Deliberation has no end unless it is closed by a fair and accurate voting rule (ideal deliberation depends essentially on the constraining force of a unanimity rule, it is not deliberation, but deliberation and unanimity together that yield ideal consensus). We need democratic voting, because, in the circumstances of politics, deliberation does not end in consensus. We need deliberation because voting itself is

silent about the content of alternatives, and about the reasons for choosing one alternative over another, and reasons should be given for authoritative actions. The essential importance of deliberation is in the reciprocal giving of reasons, however (see Freeman 2000); not in the narrowing of disagreement, which is a contingent byproduct. The reciprocal giving of reasons is why democracy must have a deliberative aspect; if it happened not to narrow disagreement, deliberation would still be as necessary to democracy as is voting.

I have little quarrel with Dryzek and List's carefully detailed and stated claims; I think they are almost entirely true. I fear, however, that these true claims are not enough to defeat the antipopulist interpretation. Here is the authors' argument strategy. A set of normative claims about the value of deliberation is stated. A set of empirical hypotheses, each based on some of the normative claims, is stated. The logical findings of social choice theory are assumed or restated; and possible relaxations of the constraints of the Arrow theorem, or of the Gibbard-Satterthwaite theorem (the logical possibility of strategic misrepresentation of preferences under almost all voting rules of interest) are identified. A set of five conditionals is stated: in each, if an empirical hypothesis about deliberation were true, then by the logic of social choice theory, the probability of a meaningful social choice improves.

The normative claims are as follows. Dryzek and List say that deliberation *can* have informational aspects (confronting people with new facts and perspectives); argumentative aspects (drawing people's attention to new arguments, their internal consistency, making assumptions explicit, clarifying facts and values); reflective aspects (people reflect on their preferences knowing that they must be justified to others); and

social aspects (talking and listening enable people to recognize their interrelationship with a social group). The authors would not deny that these are empirical claims, nor would they deny the possibility that discussion could have negative effects on interaction and agreement. Here is an example. All of us could agree on a common aim, such as ending a failed war. But the more we discuss each person's reasons for ending the war – one could be a pacifist unrealistically against all war, another could be a foreign policy realist who ignores the moral aspect of international relations, another could be a belligerent nationalist who wants to redirect effort to a new conquest, another a traitor who favors the enemy, another could be a faddish conformist – the more revolted we could become by our partners' errors, making agreement on this and on additional issues with them more difficult than when we were ignorant of one another's views.

Some deliberative accounts of democracy engage in persuasive definition, in a manner that precludes practical recommendations. All political *discussion* featuring desirable values, such as those listed above, is termed *deliberation*. Any discussion featuring undesirable values is *not* deliberation, however. Introducing or increasing discussion in political processes is easy to institutionalize, but how to do the same for deliberation is obscure. Empirical investigations of whether or not the beneficial effects claimed for discussion actually occur are at best mixed in their conclusions (Thompson 2008).

One claim is that if deliberation induces individuals to reveal truthfully their preferences, then strategic misrepresentation of preferences is less of a threat to voting. Here is one of my two quibbles with the substance of their argument. Deliberation may reduce deception, but strategic voting is not necessarily deceptive. In studies of two

cycle claims, the Powell amendment and the Wilmot Proviso, actors openly state to their

audiences that their votes are strategic, given the situation: they do not deceive (Mackie

2003, 212-213, 257). Surely further instances can be cited from many parliamentary

deliberations, of members openly alerting their colleagues to vote strategically on an

upcoming measure. In the Powell and Wilmot votes, there were no underlying cycles.

Successful strategic misrepresentation of preferences is not possible under Condorcet

voting unless there is a cycle, or one side fails to respond strategically to another.

Moreover, it is possible, as we have seen, for strategic voters to constrain the outcome to

the uncovered set, as we shall see in the discussion of the pluralist response. When this

happens, strategic voting does not undermine the centrality of the collective choice, rather

it advances it.

The second claim is that if deliberation narrows the domain of individual

preferences to those that are single-peaked (or, more easily attainable, to those which are

"value-restricted"), then both cycling and strategic misrepresentation of preferences

become less of a threat to voting. Discussion could widen rather than narrow that

domain, but it is almost certain, it seems to me, that there would be a general tendency to

narrow. My real objection is that natural profiles of individuals' political preferences, in

the absence of political deliberation, empirically do not yield cycles: *there is little*

problem for deliberation to remedy.

A deliberationist might object: but cycles could be rare in the population

because of general deliberations in the broad public sphere. A reply is: maybe, but they

could be rare for many other reasons. Beliefs converge because they are about the same

world, desires are similar because we are each human, and private reflections, not social

deliberations, yield these results. Preferences could be noncyclic in our community because of its common history or its common fate. It may be that, as the pluralists would have it, an essential prerequisite of democracy is a high level of economic, social, and political differentiation, which, although multiplying dimensions of concern, centripetalizes preferences in each. If one were forced to choose, in resolving a situation like Iraq's, between increased quantity and quality of deliberation on the one hand, and expanding social ties cross-cutting families, clans, and the three main identity groups on the other hand, which would it be? Another objection: our claim that deliberation attenuates social choice problems is empirical, and your claim that there is almost no problem to begin with is empirical too. A reply is: if the empirical evidence were equally weighty, then conceptually priority should go to the claim that there is little problem to solve in the first place; further, the evidence for no problem is weightier than the evidence that deliberation would attenuate the problem were it to exist.

A third claim is that if deliberation helps uncover the tacit dimensions to a controversy, then a voting decision might proceed on a dimension by dimension basis avoiding the Arrow and Gibbard-Satterthwaite problems. But, in the absence of deliberation, under some conditions a parliamentary rule allowing any one individual the right to demand the splitting of the question would have the same result.

The Rikerian reply would be to demand evidence for the possibility that deliberation would reduce the possibility of cycling, strategic voting, and agenda control, and mistakenly to demand that those problems be not reduced but eliminated. The Rikerian could also mistakenly argue that the perversities of social choice so obscure the discovery of individual preferences that deliberators and researchers would never know

when preferences are sincerely reported, nor when the incidence of cycles is reduced.

The Rejectionist Response. Pildes and Anderson (1990, 2141) criticize certain efforts to evade social choice theory. These efforts argue that the distribution of preferences among real humans is such that cycling, strategic voting, and agenda control are of little descriptive importance or normative interest under Condorcet voting, or that other assumptions of Arrow's theorem, especially the independence of irrelevant alternatives condition, are insufficiently justified, permitting the construction of voting rules that don't cycle. The authors say that the first argument relies on empirical contingencies, and that the second argument abandons the already minimal conditions of fairness assumed by Arrow's theorem. In reply, first, we do not need a voting rule for all possible worlds, we need a voting rule for the worlds humans are likely to inhabit, and a wide variety of empirical investigations have failed to identify troubling cycles in the real world. Second, Arrow's independence condition is not persuasively justified, neither on fairness nor on other grounds. Indeed, Pildes and Anderson contradict themselves on this point, asking later, "What, for instance, is unfair about voting procedures that violate the independence condition, such as the Borda count. . . ?" (2189).

The broad purpose of the authors is to provide an exhaustive external critique of social choice. Their arguments are complex and deep. I agree with Pildes and Anderson that social choice theory alone is an inadequate conception of rationality and of democratic politics, but I worry that they do not tackle the most challenging

interpretations of Arrow's scheme. [4] Although there is much to criticize in social choice, especially in its antipopulist interpretation, Arrow's own doctrines are closer to some of the critics of social choice theory than to some of the heirs of social choice theory. For Arrow, individuals are conceived to order social states, and a social state is a complete description of all individual and collective activity (Arrow 1951/1963, 17); social states do not necessarily represent separate issues, each state can contain different complementarities and substitutions among all issues (109). Egoism is not necessarily assumed, the reasons for an individual to order social states are left generic, it could be egoistic individual tastes in one application, or individuals' values concerning the results for all in another application (18). He is not committed to consequentialism: the process by which outcomes are reached can be contained in the description of a social state (90), and presumably reasons for choices, or expressive values, could be added to descriptions as well. Finally, Arrow, in 1951, appreciated the epistemic (83) and the deliberative views of democracy (85).

The authors also reject the more narrow view that social choice theory usefully contributes to the assessment of voting schemes. They say that there are radical incommensurabilities among values such that consistency (as transitivity) is not necessary in order for individual or collective preferences to be rational. To give up on a connection of consistency to rationality is not trivial, however, and I want to argue against it. The epistemic interpretation of democratic voting relies on the aggregation of

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[4] Strictly speaking, social choice is about the functional relations between individual inputs and collective outputs. For its modern founder Arrow, however, and for many of his interpreters, it is a descriptive if not prescriptive theory, and its assumptions make up conceptions of individual and of collective rationality.

voter judgments, and the authors acknowledge that inconsistency of *judgments* would be irrational (2161). The authors also say that inconsistent *preferences* may be substantively undesirable: contradictory and unstable choices could be costly and even unjust. They respond that such costs and injustices are not enough to demand that collective preferences be consistent, because real political institutions are likely to stabilize around one of the cyclic choices, and citizens may adapt their preferences to favor the arbitrary choice. I shall comment on this response at the end of this section.

The authors affirm value pluralism. Many values are so distinct as to be incommensurable because they cannot be reduced to comparisons along a single shared dimension (2146). The ranking of completely described social states, however, does not assume that there is a single dimension of value underlying the ranking. Utilitarianism did so assume, in its original version as a single dimension of hedonic satisfaction, but Arrow and his peers had dropped that as unobservable, metaphysical. Also, Arrow's complete and transitive ranking of social states is a simplifying modeling convenience to ease formal deductions, not a literally descriptive claim; and models can be complicated by the admission of incomplete and intransitive individual preferences. [5]

One way of understanding incommensurability is that degrees of temperature are incommensurable with miles, but miles are commensurable with inches (yet we could construct a two-dimensional space, each point representing a distance-heat combination); another understanding of incommensurability is that something like temperature by its

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[5] There is a literature on social choice under weakened rationality assumptions. Relaxing the completeness assumption can avoid Arrow's theorem, for example suitable unanimity and supermajority rules would then guarantee acyclicity (Ferejohn and Grether 1974, Sen 1982).

nature would be completely ranked, but it is unlikely that something like judgments or preferences could be completely ranked. With respect to ranking of judgments or preferences, incommensurability differs from indifference: *A* is not judged better than *B*, *A* is not judged worse than *B*, and *A* is not judged as of equal value to *B*. Incommensurability does not mean that a choice between alternatives is agonizing, less than certain, vague, or involves tradeoffs. What it does mean is that someone who finds helping his family incommensurable with helping strangers is unable to express a judgment or preference over spending 0 hours a day helping the family and 24 helping strangers, 24 hours a day helping family and 0 helping strangers, and every combination in between.

The actual comparison of alternatives requires reasons, experience, advice, analogies, listing of the pros and cons, judgment, testing, revision. Student papers at first seem incomparable, but after some experience they sort themselves into rough rank order, and after contemplation some of the principles that distinguish one from another can be stated. To serve on a county budget committee, allocating a hundred million dollars over a hundred public activities would be bewildering at first; but over time one's judgments would become more precise, more confident, more explicit. One learns, formally and informally, generally and in particulars, how to compare. It is easier to do with familiar and everyday alternatives, and harder to do with strange and rarely encountered alternatives. If an individual is unable to compare the private alternatives he faces, it's nobody's business but his own; and if a voter cannot compare public alternatives maybe he should abstain (leaving influence over the decision to those who can compare). It's different for a public official who is elected or appointed as a specialist to make certain

choices, with reasons, over public alternatives. Suppose a budget committee member says that he finds jail and parks incommensurable, he has no opinion one way or another over $10 million for jail and 0 for parks, or the reverse, or any mixture (we are not talking about someone being *indifferent* across some range of tradeoffs). That's not a violation, but it's certainly a disappointment, of the public trust. We'd say, let's find someone who does know how to make such judgments.

Pildes and Anderson offer the example of a town that must decide whether to cut funding for schools, fire, or police. Each service is supported by "weighty, but very different reasons" (2160). Arson is increasingly endangering lives and property, the town has a commitment to education and a record of success in enabling disadvantaged students to go to college, councilors have been elected on a promise to improve police services: considerations of welfare, particular obligation, perfectionist ends, and special commitments collide. They say that these considerations cannot be reduced to a single-dimensional calculation, nor can they be reconciled by cost-benefit analysis. But social choice theory does not necessarily assume either. Individuals alone and together can consider the reasons pro and con for any alternative, not reducing the alternatives to a single dimension of welfare or money.

In terms of social choice theory, incommensurable individual preferences are not inconsistent, rather they are incomplete. There is no relation between Q and R: not better than, not indifferent to, not worse than. For modeling convenience the theory assumes that individual preferences are complete, and, given completeness of individual preferences, then shows that some aggregation rules are incomplete. Take majority rule over three alternatives. Alternative L could get 40%, M 31%, and N 29%. Since 50% or

better is needed for a tie or a win, but each alternative gets less than 50%, it is shown by

example that majority rule over more than two alternatives is an incomplete aggregation

rule. Every voter confidently ranks *L*, *M*, and *N*; the incompleteness of the voting rule is

not due to any incommensurabilities among individual rankings, however. Now consider

the following profile of voter preferences, which contains some incomplete individual

preferences. Voter 1 ranks *A* > *B* and *C* > *D*, but does not know how to compare *A* or *B*

to *C* or *D*. Voter 2 ranks *A* > *C* > *D*, but does not know how to compare any of those

alternatives to *B*. And so on as in Table 2. Have each individual vote when a pair is

commensurable, and abstain when a pair is not. Sum up the pairwise comparisons, and

the social choice is the consistent *A* > *B* > *C* > *D*. Individual preferences incomplete due

to incommensurability can easily add up to complete collective preferences.

Table 2. Voter Profile With Incomplete Preferences

Voter 1	Voter 2	Voter 3	Voter 4
A	A	B	D
B	C	A	A
	D	C	
C		D	C
D	B		B

I could have constructed another example containing some incomplete

individual preferences, but have slipped in a cyclical profile (e.g., embedded among some

larger list of alternatives, some voters rank *A* > *B*, *B* > *C*, *A* > *C*, some rank *C* > *A*, *A* > *B*,

C > *B*, and some rank *B* > *C*, *C* > *A*, *B* > *A*) among the complete individual preferences,

and then the social choice would cycle among *A* > *B* > *C* > *A*. The cycle would be due to

the aggregation of commensurable and thus voted preferences over some pairs of

alternatives, and would not be due to unvoted because incommensurable preferences

between other pairs.

A rule might allow a voter to express indifference over a pair, and a voter incommensurable over a pair could for practical purposes cast a vote of indifference between them, even though incommensurability is not indifference. If some or all voters did cast votes of indifference over alternatives they considered incommensurable, that would not result in a cyclical social choice, unless a cyclical profile is embedded among individual voters' rankings. If individuals had complete and transitive preferences, but those preferences contain in part a cyclical profile, thus resulting in a cycle in the social choice, $A > B > C > A$, one might be tempted to treat the cycle as a social judgment of incommensurability expressed for practical purposes as an indifference relation: $A \sim B \sim C$. That would be a mistake.

Consider the voter profile in Table 3. One individual ranks $X > Y > Z$, 49 individuals rank $Z > X > Y$, and 49 rank $Y > Z > X$. This is a cyclical profile of preferences, and thus the social choice is $X > Y > Z > X$. Counting the cycle as a tie would yield $X \sim Y \sim Z$. There are 98 out of 99 voters, however, who favor Z over X; thus, can we really say that the social relation between Z and X should be one of indifference? Other, more accurate voting rules, such as the Borda count and Young-Kemeny, which do not yield social choice cycles from cyclical profiles, properly identify Z as the winner of this contest.

Table 3. An Unbalanced Cycle

	X	Y	Z	BC
X		*50*	1	51
Y	49		*50*	100
Z	*98*	49		147

Change the profile so that three individuals rank $X > Y > Z$, three individuals rank $Z > X > Y$, and three rank $Y > Z > X$, and again the social choice would be a cycle , $X > Y > Z > X$. The Borda count and Young-Kemeny rule properly classify this social choice as a tie. It is right to classify this social choice as a tie, but to classify it as an incommensurability would not be right. The cycle is not due to incommensurability among individual or social preferences, it is due to fetishization of Condorcet pairwise voting as the only standard for the aggregation of ordinal individual preferences, when the Borda count is the better ideal standard for such preferences (it's not a useful voting rule in practice, but it can be approximated by more useful rules).

The unbalanced cycle undermines any suggestion that cycling over alternatives is normatively acceptable because it is akin to a tie over alternatives. The town council story continues, I infer with the assumption that each councilor's ranking is complete, but that council's collective choice is a cycle, and, "as long as the worth of the chosen good is not clearly and significantly inferior to the worth of other options, it can be a rational choice" (2162). The statement assumes that *worth* is commensurable among alternatives, and the authors state that judgments of superior worth must be consistently ranked (2161). But if there were cycling, *X*, socially the least worthy of alternatives, could win. Another example is of a town choosing over *A*, allowing only display of a crèche at Christmas, *B*, allowing the display of all religious and secular symbols, and *C*, allowing no display. Each of the councilors, it seems, is able to commensurate the worthiness of the three alternatives, but at the collective level, "the understandings of what is at stake are fundamentally incommensurable . . . no choice can be said to reflect a coherent collective judgment of the worth of the different options" (2164). But again, what would

we say if the alternative chosen were like unpopular *X* in the unbalanced cycle? If every councilor were committed to the public good, and we used the Borda count or Young-Kemeny rule to aggregate their competent and independent judgments, one strain of social choice theory tells us that *X* would be rejected as least likely to track the truth. Now we see why the authors' suggestion that institutional stabilization at one of the cyclic choices, and citizen adaptation to that choice, is no way out. Alternating among roughly tied alternatives might be democratic, but for a voting rule to alternate among popular *Z*, middling *Y* and unpopular *X*, definitely is not (it violates equality and centrality).

Social choice theory, *correctly interpreted*, is necessary for the more limited purpose of understanding and evaluating voting rules, I contend, but also it is far from sufficient.

Social Choice Theory Is Not Indubitable. All camps tend to accept the claim that social choice theory systematizes intuitions of fairness, but I shall argue that the claim is not vindicable. Social choice explores the logical properties of rules for aggregating more than one list of relations among variables into a single list of relations among variables. As such, it has nothing to do with the beliefs, desires, actions, and individual or collective decisions, of human beings. The enterprise could be, and often is, carried out without reference to human concerns. A variety of assumptions is made, and from each set of them a variety of implications is deduced. The value of these investigations is the same as the value of exploring any other abstract logical domain.

Some people who could be called social choice theorists, and some of their interpreters, have larger aims. They suggest, or insist, that some particular set of

assumptions is a descriptively adequate model of human actions, simplified, yes, but not abstracting away from the essentials. An overlapping set of theorists and interpreters defend some particular set of assumptions as normatively desirable. There are prominent and worthy exceptions, such as Amartya Sen or Christian List, but usually these descriptive and normative claims are merely asserted or defended by a simple appeal to nondiscursive intuition.

In science, as in legislation, it is probably better not to know how the sausage is made (Gilbert and Mulkay 1984). The idealization of the process differs heartbreakingly from actual practice. Ferejohn and Fiorina (1986, 7) say that,

> The modern theory of social choice contains a number of attempts to develop a defense of particular voting or collective-decision procedures by appeal to axioms aimed at characterizing one or another aspect of procedural fairness. Social choice theorists are, in general, committed to the view that the appropriate project for democratic theory is to develop and justify the constraints that can serve to represent our fundamental notions of fair or legitimate procedures. Social choice theory attempts this essentially proceduralist project through axiomatic constructions.

Actual practice usually differs, or so it seems to me. A social choice theorist knows of some interesting results, brings in some new twist, tinkers with the assumptions, and works out a new result; disciplinary progress is incremental and cumulative. If any of the assumptions or conclusions are arguably relevant to human interests, that is mentioned in the first and last paragraphs of the article, adding to the appeal of the piece. Examination of the work product in no way suggests that there was first, philosophical deliberation on the nature of fairness, second, the considered selection and detailed justification of an

assumption that formalizes some aspect of our well-considered judgments of fairness, and, third, selection of a set of assumptions necessarily and sufficiently relevant to some practical concern.

Special merit is reserved for supposedly counterintuitive results, for appearing to show that something which most people take for granted is somehow misleading or false; there is a selection effect promoting such showings, and supply responds to demand. The most famed counterintuitive claim is Arrow's, that, given a few innocuous and allegedly fair assumptions, it is impossible to aggregate ordinal rankings. One assumption is that individual preferences and their social aggregation should be represented as complete and transitive *orderings*, ordinal rankings. A second, *dictatorship*, condition states that that the social choice should not be exclusively determined by the rankings of a single individual. A third condition of *universality* is that all possible profiles of individual preferences should be admitted to social choice. The purpose that this serves in the proof is to eliminate any aggregation rule which compares alternatives pairwise (such as Condorcet voting, which selects the alternative which beats all others in pairwise comparison). Some profiles of individual preferences, as it happens those which are most dissimilar to one another, yield a cyclical social outcome, which violates the requirement that the social choice should be a complete and transitive ordering. A fourth *unanimity* condition states that if all individuals rank one option over another, then so should the social choice rule. This serves to point the social choice in the right direction, eliminating such rules as find out what the majority wants and do the opposite. A fifth is the *independence* condition, that if individuals' rankings of two alternatives remain the same, the social choice over those two alternatives should remain the same if one or more

of those individuals change their ranking over some third alternative. The purpose that this condition serves in the proof is to eliminate all positional voting rules, such as the Borda count, or plurality rule. The proof eliminates pairwise voting rules with the universality condition, positional voting rules with the independence condition, leaving only dictatorship, which is then eliminated, leaving no possible voting rules.

Four of Euclid's five axioms of geometry are overwhelmingly compelling in a way that the axioms offered by social choice theory are not. The dictatorship condition does not clench one's assent, as does Euclid's axiom that any straight line segment can be extended indefinitely in a straight line. On the one hand, the dictatorship condition forbids dictatorship by one, but not dictatorship by two, nor oligarchic franchise, nor voting weighted by wealth. On the other hand, it would forbid protecting from interference by social choice a sphere of individual choices of no harm to others. "Any two points can be joined in a straight line" is immediate and needs no further justification, and one would not know what to say to someone who claimed to reject it. Compare that to Arrow's universality condition, which forbids any exclusion of individuals' preferences from the social choice, even if all unanimously agreed to exclude them. Compare the Arrovian axiom of unanimity to Euclid's axiom that all right angles are congruent. Unanimity is generally appealing, but, unlike the Euclidean axiom, exceptions are easy to imagine. Suppose that a herding people comes to believe unanimously that the slaughter of all cattle will bring about paradise on earth. If feasible, wouldn't we want a social choice rule that would filter out false beliefs leading to group extinction? Finally, Arrow's independence axiom is the least intuitive of the five. A moral axiom that *would* excite the intuitive concurrence of democrats, equality of voters,

is deliberately absent from the scheme (assumption of voter equality is a value judgment outside the ken of "science").

Euclid's fifth axiom, the parallel postulate, was appealing, but suspicious even to Euclid and the ancients (Euclid's first 28 propositions are proved without reference to the parallel postulate), because it would take an infinite amount of time to check that two parallel lines would never intersect. In the 19th century, non-Euclidean geometries, which use one or another alternative to the parallel postulate, were discovered. The Arrovian independence condition has no intuitive appeal, no descriptive appeal, and no normative appeal (the common claim, that the independence condition serves to require orderings, is false; it redundantly requires orderings but goes further to prohibit any ranking information other than pairwise comparison). Suppose we were to ask any human audience uncontaminated by theoretical commitment whether the Arrovian independence condition (that the social choice over two alternatives must not change should any of the individuals' preferences over third alternatives do change) is an essential requirement for any voting rule. What would they say? The answer, I say, is intuitive: almost no one would endorse it.

Further, as with the parallel postulate, since humans lack logical omniscience, one should not endorse any slightly suspicious axiom taken in isolation. One would want to see its logical implications as it is variously combined with different sets of assumptions. If an axiom contributes to absurd conclusions, for example, Arrow's that no voting rule is possible, one is obliged to heighten one's suspicion about the axiom. Moreover, if one has practical interests, such as in the usefulness of a voting rule in real human settings, one would want to check whether a logical result had any empirical

relevance.

For an example of how the lack of logical omniscience might lead to the wrong conclusion, consider the frequent but confused celebration of May's theorem, which assumes four axioms which together uniquely identify majority rule over two alternatives: *decisiveness* (an alternative wins, loses, or ties); *anonymity*, in that if voters trade names the result is unchanged (that is, it treats all voters alike); *neutrality,* in that if alternatives trade names the result is unchanged (it does not privilege any alternatives); and *strong monotonicity* (positive responsiveness), that is, if an alternative *X* is among the winners and if one voter changes her vote to *X* then *X* becomes the unique winner. Just as Arrow's dictatorship condition has little to do with dictatorship, the decisiveness condition, which counts ties as decisive, has little to do with the practical need for a choice, not a tie. Anonymity would block delegation of decisions from the citizens to the legislative assembly, or from the assembly to its leadership and committees, or to executive and judicial authorities, but that violation does not imply that ideal representative democracy fails to accept each citizen's vote at equal value. The idea of equal basic rights, a sphere of decisions reserved to the individual, also violates anonymity, but no one should be concerned that it does. Constitutional entrenchments violate the condition that a voting rule be neutral between alternatives, but that violation is good for democracy, not bad for it. The modern democratic revolutions were fought over equality and popular sovereignty, not over the anonymity and neutrality conditions.

Again, none of the conditions is overwhelmingly compelling. The biggest problem is with strong monotonicity: it applies only to cases such as 50 votes for and 50 votes against, where a reversal of one vote would change the result to 51 for and 49

against. There are several possible voting rules, among them the Borda count, that can

handle more than two alternatives, and that satisfy decisiveness, anonymity, neutrality,

and *weak monotonicity* (nonnegative responsiveness), that is, if an alternative *X* is among

the winners and if one voter changes her vote to *X* then *X* does not become a loser, it

should never hurt an alternative to get more support. Moreover, to show that the Borda

count violates strong monotonicity is an exercise of no substantive interest, because in the

circumstances the Borda count *should* violate the condition.[6] Nor is it necessarily a

worry for a voting rule, such as plurality runoff or single transferable vote, not to satisfy

nonnegative responsiveness as a logical possibility. The proper question should be: how

often would the voting rule violate nonnegative responsiveness in real settings (almost

never), and what are its other *real* advantages and disadvantages, compared to the *real*

advantages and disadvantages of some alternative voting rule? The idea that social

choice theorists assemble some set of axioms of minimal fairness, then combine them

into a conclusion of moral and practical significance, does not survive examination.

Their work is wonderful and useful, but on its own settles no descriptive or normative

questions.

The assumptions of formal decision theory were fruitfully probed by *behavioral*

decision theory (e.g., Kahneman, Slovic, and Tversky 1982; Camerer 2003). There is

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[6] Nurmi (2004): assume a cyclical profile with five voters favoring A > B > C, five voters B > C > A, and five voters C > A > B; this canonical cycle is a tie under the Borda Count, A ~ B ~ C. Among the five who vote for A > B > C, have one voter change to B > A > C, thereby raising the vote for B. Next, change the five who vote for C > A > B to to A > C > B. After the changes, the Borda and Condorcet social ranking is A > B > C; B was originally tied, one voter moved B from second to first in her ranking, but the new social ranking picks A, in violation of positive responsiveness. Yes, B moved up one notch and deserves to outrank C, but A moved up five notches and thus

another movement to test experimentally whether the various intuitions claimed by philosophers are in fact held by natural populations. It's controversial, for one thing, because members of the natural population may not have carefully thought through the implications of the concepts at stake. Also, if some philosophers intuit X and some intuit not-X, and the natural population is similarly split, then there is no motivation for revision in view. It would be significant, however, if some theorists intuit X, some intuit not-X, and almost the whole natural population intuits not-X. Is there a behavioral social choice theory?

Rather than armchair appeals to intuitions about isolated axioms, how about experimental investigation of intuitive preference aggregation? Under controlled conditions, show subjects a series of individual preference profiles, and, without reference to any voting rule, ask them "Which alternative should be chosen for the group?" Davies et al. (2006) did just that and found that *almost all* subjects violate Arrow's independence condition, as well as contraction consistency (the idea that the social choice between A and B not change should alternative C drop from consideration, implicated in the assumption that the social choice should be an ordering). The studies yield large effects, in response to minimal manipulations, are extremely significant, and the basic results are robust to variations in experimental design. To repeat, almost all subjects. How would these subjects respond to the first four Euclidean axioms, or the resultant theorems of geometry? With nearly unanimous assent, I think, the exceptions being those who fail to understand them. So much for the intuitive foundations of social choice theory.

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deserves to outrank B. That's just what should happen!

In contrast to this finding from a natural human population, I was told recently that the Arrow theorem is so deep that biological evolution provides devices to humans whereby to overcome its impossibility result. My reply was that nature has no reason to respect Professor Kenneth Arrow's independence axiom. A swarm of bees, glutted with food for their flight and for new hivebuilding, huddle together to conserve energy. They appoint a subcommittee of scouts, who search the surrounding territory for possible sites for the new hive. Scouts report back up to 12 possible sites, moreover, a site is evaluated by scouts over about five attributes (the dreaded multidimensionalilty supposed to give rise to decisional chaos). A returning scout does a dance conveying information about the site: the more energetic and prolonged, the better the site. A remaining scout observing dances goes to investigate a more highly evaluated site, and returns with her own dance of evaluation, and the process is constantly reiterated over several days. Economic dogma is that there is no knowing the comparable intensity of preferences, but here insects with brains the size of a pencil dot are capable of it. Even if one were to insist that the bees' rankings are ordinal rather than cardinal, still they operate by a process resembling the single transferable vote (one difference is that new alternatives are introduced during the voting process), and that would violate Arrow's independence condition, because it does not operate by pairwise comparison. The lowest-ranked alternative is eliminated as scouts abandon it for higher-ranked alternatives. Lowest-ranked alternatives are eliminated seriatim until one alternative is left, and then off the swarm flies. Hive selection is an imperfect procedure, it selects the best site most of the time, but not as a matter of necessity, according to ethologists.

Social choice theory purports to draw deductive certainties from indubitable

premises, but I have challenged the analogy to geometry. Formalization reduces logical error. It does not reduce conceptual or empirical errors, however, and it reduces by far the audience able to detect them. For the great questions of democratic theory, social choice theory has so far confused as much as it has clarified.

Conclusion. Although none of the indirect responses is sufficient to overcome the antipopulist interpretation, I have argued, each of them is savvy and sophisticated, and each constructively advances democratic theory. The epistemic response precisely identifies the difficulties of justifying majority voting on purely procedural grounds, and has informed much of subsequent democratic theory. The deliberative response calls attention to discussion as an essential feature of democracy, and shows by laudable example how to integrate social choice method with normative democratic theory. The rejectionist response shows that social choice theory is not a complete theory of practical reason or of democracy. The pluralist response directs our attention to the turnover of coalitions in a legislature, and ultimately to the identification and reform of antimajoritarian features in actual legislatures. And, an accumulation of findings now permits a direct confrontation with the antipopulist interpretation, and arguably it succumbs to internal critique. It is no longer credible, however, to claim that "the literature on social choice is quite sophisticated and covers, in an entirely more analytic style, much of the same ground as the more qualitative work on political philosophy," nor that "the public interest is a normative ideal that cannot be given concreteness in most political settings" (Shepsle and Bonchek 1997, 80, 93).

The antipopulist interpretation has had some unfortunate consequences, and its demise would allow for their rectification. On the one hand, although its hegemonic

ambitions and its exaggerations were the work of a faction, they gave to outsiders the wrong impression of social choice theory as a whole. The best of social choice theory theorizes constructively about human problems (Sen 1999), and it is capable of making more such contributions to democratic theory. On the other hand, the mistaken devaluation of democratic voting stampeded political theorists into the study of democratic discussion. Direct rejection of the antipopulist interpretation and other skeptical but erroneous claims of political science about voting allows them to resume conceptual and normative investigations of voting as the other essential feature of democracy.

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