Democratic Reason: Why the Many Are Smarter than the Few and Why It Matters

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The idea of collective wisdom—that is, the view that many heads can be smart and are in general better than one—is at least as old as Aristotle's *Politics*,[1] if not older (Aristotle himself borrows the view that many heads are better than one and that this is why democracy is a good thing from the Sophists.) One might argue that this idea is at the core of any collective endeavor, perhaps any society. People flock together because they know they can achieve more as a group than they could on their own, and they make decisions collectively because they believe that the expected quality of such decisions will be, on average, smarter than the expected quality of those that only one of them would make on their behalf. The opposite view, however, which denounces "the madness of crowds" (Charles Mackay 1841) and claims that "too many cooks spoil the broth" is just as established. In politics at least, from Plato to contemporary elitist democrats, the view of the many as incapable of self-rule, let alone any kind of smart decision-making, is dominant.[2]

In recent years, however, the idea of group intelligence applied to societies has been revived by publications such as Howard Rheingold's (2003) *Smart Mobs,* James Surowiecki's (2004) *Wisdom of Crowds: Why the Many are Smarter than the Few and How Collective Wisdom Shapes Business, Economies, Societies, and Nations,* or Cass Sunstein's (2006) *Infotopia: How Many Minds Produce Knowledge*. In parallel, and independently, democratic theory has seen a small group of self-labeled "epistemic democrats" reconnect, generally within the more mainstream paradigm of "deliberative democracy," the idea of democratic authority and the ability of democratic institutions to

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[1]   See Waldron 1995 for an extensive commentary of what he has happily labeled the "doctrine of the wisdom of the multitude" or DWM.
[2]   For a recent version of that old Platonician theme see Caplan 2007.

produce good collective decisions (e.g., Estlund 1997 and 2008, Goodin 2003 and 2008). All the while, formal theorists had rediscovered the Condorcet Jury Theorem and both literature quickly connected about the question of its relevance for democracy (see the debates in Grofman, Feld, and Waldron 1989 for example). Most recently Josiah Ober has argued that Ancient Athens had epistemic properties that made it capable of aggregating and processing information more efficiently than rival city-states (Ober 2009).

There has thus been a revival of the old Aristotelian argument that many heads are better than one, coming from different perspectives. Using and connecting these different literatures, as well as concepts developed in psychology and cognitive sciences, I have myself proposed a sustained epistemic defense of democracy based on the idea of collective intelligence (Landemore ms 2008 and In Press). In that work I make the claim that democratic institutions such as inclusive deliberation and majority rule with universal suffrage combine their epistemic properties to turn the lead of individual citizens' input into the gold of "democratic reason" and give democracy an epistemic edge over any variant of the rule of the few—a fairly bold claim since epistemic democrats have so far only ventured the idea that democracy does better than a coin flip (Estlund 2008). I have labeled "democratic reason" the kind of collective intelligence both tapped and produced by democratic institutions.

This paper aims to accomplish two things. One is to present in a condensed form, and defend, the theoretical connection that arguably exists between the phenomenon of "collective intelligence" or "collective wisdom" and the principle of democratic collective decision-making. On my view, the reason why the many can be expected to be

smarter than the few is because of a plausible correlation between inclusive decision-making and the presence of an ingredient recently shown to be key to the emergence of collective intelligence, namely "cognitive diversity" (Hong and Page 2001, 2004 and 2009; Page 2007). To the extent that including more people specifically increases this type of diversity, all things equal otherwise (that is, controlling for a number of interfering factors like communication costs), more is bound to be smarter.

Second, the paper considers the positive and normative implications of the idea of collective intelligence as an argument for democracy. On the positive side, I argue that the idea of "democratic reason"—or the collective intelligence of the people in politics--provides a conceptual umbrella for a lot of empirical research in political science and economics, at least the kind that tries to identify correlations between certain valued outcomes and democratic decision-making. I also argue that the idea of collective intelligence as a function of at least two ingredients—individual ability and cognitive diversity—provides a framework in which a lot of public opinion research results that focus only on the first of these ingredients but entirely ignore the other can be reinterpreted in a less dispiriting way than is currently the case. For now, public opinion research seems busy demonstrating the incompetence/irrationality/lack of information of the public's preferences. If it is the case that the existence of sufficient cognitive diversity in a group can, when properly channeled by the decision-making process, more than offset the lack of individual ability of its members, then there is fewer reasons to worry about the topical incompetence of the average voter and more reasons to study the ways in which democracy can function well in spite of such apparent problems.

On the side of normative democratic theory, I propose that the argument from collective intelligence may not simply add to the toolbox of arguments for democracy but invites us to question the status of those other arguments. I specifically question the status of David Estlund's theory of a "general acceptability requirement" as a blocking move to the conclusion that if truth matters to politics, then experts should rule. In many ways the argument from collective intelligence is a more compelling blocking move: if truth matters to politics, and if only the group is most likely to figure it out, then no subset of "experts" within it can legitimately claim a right to rule.

The conclusion presents a few thoughts on the potential policy-implications of the argument from collective intelligence. I suggest that where feasible and properly applied, efforts to make the collective decision-making process more inclusive and participatory should result in not just fairer but overall smarter collective decisions.

1. Democratic reason: the argument from collective intelligence

Let me start with a rough definition of the idea of collective wisdom or collective intelligence that I apply to democratic politics under the name of "democratic reason." I define democratic reason as a certain kind of emergent phenomenon by which a people turns out to be smarter or wiser than individuals within it. This paper uses indifferently the terms "intelligence" and "wisdom," even though the concept of wisdom is richer than the concept of intelligence, including notions of experience, time-tested knowledge, and more generally diachronic intelligence that are certainly part of democratic reason but that won't be explored here.[3] The only diachronic aspect of democratic reason that this

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[3] For a more extended study of those notions, see for example D. Andler in Landemore and Elster In Press.

paper touches upon is that introduced by the institution of representation, which creates some temporal mediation between the input of citizens and its translations into actual policies.

It should also be emphasized that "democratic reason" is meant in part to contrast with the less inclusive Rawlsian concept of "public reason." Public Reason in Rawls works as a liberal standard of justification, and perhaps as a theory of limited government, but has in fact little to do with the reason of the public at large, being in effect the reason of representatives, candidates for office, Supreme Justices and other presumed "reasonable" people (Rawls 1993). The concept of democratic reason is, by comparison, meant to be maximally inclusive.[4]

The sustained epistemic case for democracy that I propose in relation to this idea of democratic reason boils down to the simple following claim: democracy is a good collective decision-making procedure because, among other things and all things equal otherwise, it maximizes our collective chances to make the right choices.[5] Further, the reason why democracy has this epistemic superiority over less inclusive decision-making procedures is because of an essential connection between more inclusive decision-making and what has been shown to be a key element of collective intelligence, namely "cognitive diversity."

Without simplifying too much, one can say that the phenomenon of collective intelligence is a function of two factors. One factor is the ability or sophistication of the

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[4]   The only restrictions on the inclusiveness of the concept that are implicitly accepted as having some normative relevance are the criteria limiting the democratic franchise (age and criminal record among others).

[5]   Leaving aside for now the difficult philosophical question of what counts as a "right" choice, accept that there exist such a procedure-independent standard of correctness (as required by any epistemic approach to democracy, see Cohen 1986).

individual members of the group, which can be expressed by an average ability, let's call it their "IQ." This factor is a property of an idealized "average" or "representative" group member. The other factor is "cognitive diversity" or, roughly, the existence within a given group of different ways to see the world, interpret it, and apply predictive models in it. More technically, cognitive diversity denotes a diversity of perspectives (the way of representing situations and problems), diversity of interpretations (the way of categorizing or partitioning perspectives), diversity of heuristics (the way of generating solutions to problems), and diversity of predictive models (the way of inferring cause and effect) (Page 2007: 7; see also Stich 1999). Notice that cognitive diversity is a property of the group itself, not any individual within it.

What Hong and Page show is that individual ability and cognitive diversity play a different role in different contexts, an intuition that we all easily understand but that they establish as mathematical truths. In problem-solving situations, what matters most to the quality of the collective answer, is not so much how smart individuals are but how cognitively diverse they are (Diversity Trumps Ability Theorem).[6] For a brief, stylized illustration (which I develop at length in Landemore In Press), think of the problem-

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[6] Because of the importance of cognitive diversity, given four specific conditions, "a randomly selected collection of problem solvers outperforms a collection of the best individual problem solvers" (Page 2007: 163). The four conditions are fairly reasonable. The first one requires that the problem be difficult enough, since we do not need a group to solve easy problems. The second condition requires that all problem solvers are relatively smart. In other words, the members of the group must have local optima that are not too low otherwise the group would get stuck far from the global optimum. The third condition simply assumes a diversity of local optima such that the intersection of the problem-solvers' local optima contains only the global optimum. Finally, the fourth condition requires that the initial population from which the problem solvers are picked must be large and the collection of problem solvers working together must contain more than a handful of problem solvers. This assumption ensures that the randomly picked collection of problem-solvers in the larger pool is diverse and in particular more cognitively diverse than a collection of the best of the larger pool—which would not necessarily be the case for too small a pool relative to the size of the subset of randomly chosen problem-solvers or for too small a subset of problem-solvers in absolute terms. Notice that the first part of this fourth condition can be thought of as Madison's requirement in Federalist 10 that the pool of candidates to the position of representatives be large enough. For more on this, see Page 2007: 159-162.

solving that goes on in the movie "Twelve Angry Men." As individuals, all the jurors initially convinced of the guilt of the defendant would have stuck with a mistaken verdict. Even the dissenting juror (played by Henri Fonda) would not have been able to go beyond his vague intuition that the guilt was not beyond reasonable doubt. It is only after collectively brainstorming the available information and arguments and putting them through the many filters and lenses of the group that the jury members can unanimously reach an assured verdict of non-guilty.

What happens in between those two moments is a process in which the jurors tease out of each other different arguments and various interpretations of the available information, which ultimately add up to a better answer than the one they were initially individually convinced of. One of the turning points in the deliberation comes from a reinterpretation of the role played by a switch-blade in the murder. The weapon was initially assumed to have been used to stab the victim. One of the jurors, however, who grew up in the slums, remarks that switch-blades cannot be used that way. This crucial piece of information transforms the collective reading of the whole murder scenario, inviting new questions, new information, and new interpretations to come to the fore. Another collective discovery happens after someone raises the question of what the red marks on the nose of the key witness were and it becomes clear that the testimony of an obviously short-sighted woman (who took off her glasses out of vanity before testifying at the trial) cannot be trusted.

The general point illustrated in the movie is that what matters more for problem-solving of the kind involved in a jury situation is how diversely thinking the group is,

rather than how smart the individuals in the group are.[7] After all, initially, 10 out of 11 jurors were wrong—setting a very low threshold of collective IQ if you will. And yet by the virtue of one initial dissenting perspective on the problem (expressed by Juror 8), which sets off a discussion about the reasons each juror has to defend a guilty verdict, different perspectives applied to the problem bring out new elements and, ultimately, the jurors are able to guide each other toward the right answer. A minimal amount of cognitive diversity, in other words, can compensate for a lot of individual incompetence.

In other contexts, however, cognitive diversity simply matters as much as individual ability (Diversity Theorem). These contexts correspond to situations where judgments are simply aggregated into a collective answer, with no possibility to weed out the bad input from the good, unlike what happens in diachronic, deliberative problem-solving of the kind illustrated by the jury situation (Diversity Trumps Ability Theorem). In purely aggregative contexts, in other words, there is a strict trade-off between the two components of collective intelligence. Without going into the detail of why judgment aggregation in a group can yield more accurate judgments and predictions than any individual judgment or prediction, let me just say that according to Hong and Page's account, the reason why the aggregation of predictive models can do such a great job at producing correct decisions comes from the existence of negative correlations between voters' predictions.[8] The good thing about negative correlation of this type is that it guarantees that where one person makes a mistake, another is more likely to get it right and vice-versa. In the aggregate therefore, mistakes cancel each other in a systematic

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[7]   For a different example borrowing from local politics see Landemore forthcoming 2011.
[8]   I leave it to the reader to go back to the actual mathematical demonstration of the more general theorems (Diversity Theorem and Crowd Beats Average theorem) in Page 2007 (Chapter 8). For a vulgarized version, see Landemore 2007 ms.

(that is better than random) way. As a result, the average mistake of the group will be less than the average mistake of a randomly selected individual, and in fact all the lesser as the difference between the predictive models used by those individuals is greater (i.e., as there is more cognitive diversity in the group).

To illustrate the phenomenon, consider the way people make predictions about who is the best potential president out of two candidates. Some of us will base our judgment on how competent on social issues he is likely to be. Others will make a prediction based on both how fiscally conservative he is and the presumed state of the economy in the coming years. It is likely that there will be negative correlations between the predictions of someone who focuses only on the candidate's competence on social issues and someone who focuses solely on the candidate's competence on fiscal issues. As a result, the collective judgment produced by an aggregation of such diverse predictive models will tend to yield more accurate predictions than any individual predictive model on its own. In other words, we are more likely to elect the right president when we aggregate Democratic and Republican predictive models than if we made predictions based solely on either one of them.

Now, one may ask, where do these negative correlations come from? They come from the fact that when looking at different candidates, different individuals do not look at the different dimensions of a same quality (or in Page's vocabulary "perspective"), here competence for office. One person focuses on competence on social issues, another focuses on competence on economic issues. This produces what Page calls "non overlapping projection interpretations," that is interpretations of the candidate's

competence that do not contain any of the same variables or dimensions (in this case competence on social issue or on economic issue).[9]

Notice that the emphasis in Hong and Page's account is not so much on the existence of a large number of people as the cognitive diversity that this number can bring. In fact the beauty of the explanation proposed by Hong and Page is that judgment aggregation can produce amazing results even with a small number of people involved.[10] On Hong and Page's account, you do not need to have an infinity of voters for majority rule to guarantee 100% predictive accuracy. This is a great advantage over « law of large numbers » types of account of group intelligence, such as the Condorcet Jury Theorem (Condorcet 1785) or the Miracle of Aggregation (Converse 1971). Because cognitive diversity can exist as soon as there are more than one person making the prediction, the magic can work for as small a agroup as three people and is substantially increased for any addition of a person with a sufficiently diverse predictive model to the group (whereas in the CJT model, the major payoff of majority rule is at the limit, for an infinity of people, and adding one person to the group does not make much of a difference).

This account is of course no more immune to the problem of systematic biases than the CJT or the Miracle of Aggregation are. If citizens share a number of wrong

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[9]   Page formalizes "the Projection Property" as follows: "If two people base their predictive models on different variables from the same perspective (formally, if they use nonoverlapping projection interpretations), then the correctness of their predictions is negatively correlated for binary projections" (Page 2007: 203).

[10]   A caveat needs to be added, lest the result seem too optimistic. You cannot have an infinity of variables or dimensions associated with a given perspective (say, competence for office). As the number of voters grow very large, the number of variables that people use to make a prediction may remain proportionally quite small (on top of social and economic issues, voters may look at personal charisma and foreign policy variables but they might disregard variable such as dog type or sense of humor). To avoid positive correlations as the number of people in the crowd becomes larger, people must either use cluster interpretations or they must base their interpretations on different perspectives. The interpretation of a voter combining considerations for competence on social issues and considerations for competence on financial issue is an example of cluster interpretation.

views—racist prejudices or the systematic biases diagnosed by Bryan Caplan in economic matters (2007)— majority rule is simply going to amplify these mistakes and make democratic decisions dumber, if anything, than the decisions that could have been reached by a single randomly chosen citizen. On Hong and Page's account, however, the risk of systematic mistakes by the crowd can only happen if the group lacks both individual predictive accuracy (people are really too dumb) and diversity in the way they make predictions. Assuming minimally sophisticated voters relative to the questions at hand[11] and a liberal society encouraging dissent and diverse thinking, however, one might argue that Caplan's worst case scenario of a situation in which the average error is high and diversity low—the condition for the worst case scenario of an abysmally stupid majority decision—is not very plausible.

Now, you may ask, how exactly is all this relevant for the epistemic argument for democracy? Why does the existence of something like collective intelligence emerging in problem-solving contexts and judgment aggregation contexts matter? The answer should be obvious at this point but let me spell it out. I argue that problem-solving aptly describes the task that deliberation is supposed to accomplish while collective prediction aptly describes the task that majority rule is best suited for. One can indeed plausibly defend that in democratic politics collective decision-making consists of a deliberative phase where problems are identified and solutions proposed, followed by a voting phase, where majority rule is used as a way to determine which of the proposed options is the

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[11] Questions could be the equivalent of what Luppia (2001) calls "big choices" (general policy orientation questions of the kind put on referenda) but also more complex and even technical questions such as economic issues or the reform the electoral system, provided citizens are, prior to voting, given the time to deliberate amongst themselves, since this can considerably improve the quality of their opinions at least in terms of their informational content (see Fishkin's Deliberative Polls for empirical evidence, e.g., Fishkin 2009).

best one (at least see Landemore 2009 for a defense). If so, then the combination of the results presented above supports a strong case for democratic intelligence or, as I call it "democratic reason."

For each procedure, deliberation or voting, cognitive diversity proves either as important as, or more important than, the factor of individual ability. In the cognitive system "deliberation +majority rule," therefore, the crucial epistemic component is cognitive diversity. Individual ability matters too but only secondarily. What is now the simplest way to maximize cognitive diversity in a group? My contention is that the cheapest, simplest way to ensure great cognitive diversity is by including more people in the group of decision-makers. This claim remains valid, I further argue, even if including more people means dumbing down somewhat the ability of the average member. In other words, if the choice is between making the decision-making more participatory or reducing the pool of decision-makers to a handful of "best and brightest," the safer bet is, counter-intuitively no doubt, to go with numbers.

This is so because numbers will naturally increase cognitive diversity. I say "naturally" on the (I think) plausible assumption that cognitive diversity is normally present in any typical group of human beings, since different people come into the world equipped with different cognitive toolboxes (see theories of "multiple intelligence," e.g., Gardner 1985, Sternberg 1985, Salovey and Meyer 1990). Maybe the distribution of those types of intelligences varies from society to society but it seems reasonable to assume that no human society is monolithically constituted of people who are hardwired to see the world in exactly the same way. In any case, even similarly hard-wired people would develop over time, on the basis of idiosyncratic experiences, unique cognitive

tools, mental frames, perspectives, and heuristics. All in all, I think it is safe to assume that on the long run, given the chance to develop freely distinct native abilities, different people will end up seeing the world and approaching problems in it in very different ways.

By contrast, trying to increase the "IQ" of the average member of the decision-making group by picking a certain type of people is likely to reduce cognitive diversity (people trained in the same school and trade tend to think more alike). Most importantly, even if making the decision process more inclusive reduces the average ability of the members of the group, this loss can be more than offset by the gain in cognitive diversity. Conversely, however, the gain in average individual ability will not necessarily offset the loss in cognitive diversity. This is so, again, because cognitive diversity matters MORE than individual ability for the emergence of collective intelligence in collective decision-making. In other words, it is often better to sacrifice a little bit of average ability to gain an equal amount of cognitive diversity than the reverse.

An objector might point out that including more people sounds very promising but surely there is a feasibility threshold. Whereas voting in the millions might be feasible, deliberation involving all members of a very large group is not practical. Passed a certain numerical threshold, deliberation turns into a chaotic mess, in which case the epistemic superiority seems to go by default to deliberation involving a smaller number of people, and there one might prefer to gather the smarter or more educated ones. This point can be granted, but only partially. There is certainly a cutoff point beyond which involving more people in the deliberation has diminishing returns for pure reasons of practicality. Societies have long found a solution to this threshold problem though:

representation. What the theory of collective intelligence suggests, however, is that the best solution from a purely epistemic point of view is not to go with the historically preferred way of selecting elites, namely by election, but to go very simply with a random selection of representatives. If it is the case that preserving cognitive diversity matters more than elevating the average individual ability of the decision-makers, then random selection rather than election seems more conducive to smart results.[12]

To repeat the main point: the gain of involving large numbers is that it automatically ensures greater cognitive diversity. If cognitive diversity is key to collective intelligence, then, all things equal otherwise, more is smarter.[13] I thus propose to generalize Hong and Page's "Diversity Trumps Ability Theorem" into a "Numbers Trumps Ability Theorem," by which what matters most to the collective intelligence of a deliberating group, and more generally democracy, is the number of people in the group. Of course, this assumption that cognitive diversity correlates with numbers will not always be verified but it is more plausible than the reverse assumption than fewer people are more cognitively diverse.[14]

2. Implications of the argument from collective intelligence

[12] Of course, it is possible that selection by election preserves the cognitive diversity of a given group but it is in practice much more dubious. It is also likely that in practice random selection is unfeasible and so representation by election is a second-best we must be content with. For an in-depth exploration of these questions, see Landemore forthcoming 2011.

[13] Notice that to the extent that (and if it is the case that) cognitive diversity is correlated with other forms of diversity, such as gender or ethnic diversity, the argument suggests that positive discrimination is not just a good thing on fairness grounds but also for epistemic reasons. I will not enter that complicated debate here but it is clearly one of the potential implications of an argument advocating the epistemic properties of cognitive diversity (for a defense of cognitive diversity as being in fact the "only" reason to support affirmative action, see the conclusions of the French sociologist Sabbagh 2003).

[14] A complicating factor is probably the (s)election mechanism. In selecting, say, a hundred representatives, a system of proportional representation may produce more cognitive diversity than majority voting in single-member districts. This invites an epistemic comparison between alternative democratic selection mechanisms, some of which can produce more cognitive diversity with fewer additional members.

Let me now turn to the implications of the argument of collective intelligence: perhaps the many are, indeed, smarter than the few, but why does it matter? And for whom? After all, democrats are already convinced that democracy is a good thing, so the collective intelligence argument might confirm their conclusions, but it comes somewhat after the battle. Justifications based on equality, justice, consent, freedom have already done the work.

It is certainly the case that the argument from collective intelligence comes too late, historically, to help the case of democracy, since many people have already died in the name of equality, consent, justice, and freedom. Historically speaking, appeals to such values were more effective than an epistemic claim that had no theoretical, let alone empirical support at the time, in justifying moving from traditional monarchies towards more democratic forms of government. But today there is empirical/historical evidence that democracies are relatively smart regimes and we also have the concepts (of collective intelligence among others) and the technologies (mass media, internet etc.) to make sense of the idea that many are smarter than few. From a normative as well as a social scientific point of view, the argument from collective intelligence needs to be taken seriously for a couple of reasons.

First, the argument from collective intelligence offers the possibility of a functionalist explanation of democracy's legitimacy, both in Ancient Times and over the last two hundred years. A functionalist explanation consists of showing how the unintentional epistemic effects of democracy contributed over the long turn to reinforcing it, without the actors involved being aware of it, as a privileged collective decision-making procedure after it was first tried for non epistemic reasons (such as, for example,

reasons based on fairness).[15] In other words, the argument from collective intelligence

supplements intrinsic arguments based on fairness, justice, consent or other democratic

value to explain why, after democracy was first sought and established in the name of

those values, it was kept around as a viable ideal. The argument from collective

intelligence may even account today for the fact that we are seemingly transitioning to

even more democratic forms of governance, as the West at least witnesses what critics

derogatorily calls the rise of "audience democracies" or "democracies of the public"

(Manin 1997) but which are arguably more direct, inclusive, and as a result possibly

smarter forms of representative democracies. The functionalist account made possible by

the argument from collective intelligence may not yet be complete (as more work

certainly needs to be done on the functioning of the "mechanisms" of democratic reason)

but it is a beginning.

Second, as part of such a functionalist argument for democracy, the argument from

collective intelligence offers a theoretical umbrella for a lot of what historians and

political scientists do when they try to establish correlations, if not causal links, between

democracy and development (e.g., Przeworski 2000), democracy and peace (e.g., Weart

2000), democracy and famine avoidance (Sen 1999), democracy and human rights or low

infant mortality, or democracy and knowledge aggregation and production (Ober 2009).

Development, peace, low infant mortality, knowledge and generally correct information

about the world, these are all procedure-independent standards of the kind presupposed

by an epistemic approach to democracy. If it can be empirically demonstrated that those

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[15] For a definition of functionalist explanations see Hardin 1980 and Elster 2007. Notice that if individuals
came to accept the epistemic benefits of democracy as a valid reason to embrace it, the explanation would
become a filter explanation, because the criterion of lack of consciousness on the part of individuals of the
benefits motivating their choices would disappear (see Fiorina

standards are better approximated by democracies than oligarchies or dictatorships, then this would provide empirical support for the argument from collective intelligence, which in turn theoretically unifies these different empirical endeavors.[16]

Finally, on the positive side of political sciences, the argument from collective intelligence invites us to question the validity of the conclusions reached by public opinion researchers about the incompetence of the public at large (I include in this the recent literature on enlightened preferences (e.g., Althaus 2003 and Caplan 2007)). Public opinion research is very good at measuring the low political competence of individuals, but it is not equipped to measure what is an even more crucial component of collective intelligence, namely cognitive diversity. Compelling conclusions regarding democratic incompetence can not be reached on the basis of measurements that take into account only one factor in the collective intelligence equation, namely individual ability as equated with raw information of the kind defined and measured by political scientists and even "enlightened preferences" (2003). Unless public opinion research can prove that the lack of individual ability fails to be offset by the presence of sufficient cognitive diversity, the case against democratic decision-making remains weak.

The implications for normative democratic theory on the other hand are at least threefold. First, the argument from collective intelligence invites us to reassess the validity of traditional arguments for democracy based on ideas of individual consent, freedom, justice or equality. While the argument from collective intelligence need not make those other arguments superfluous, it provides a more compelling story of the value

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[16]   The argument from collective intelligence, incidentally, also invites bridging the gap not just between different types of literature in democratic theory (normative and empirical roughly) but between political science and other disciplines as well. Political sciences generally take their cue from economics, but there is a whole other range of disciplines that should be of interest to the study of voter's behaviors or democratic institutions, including cognitive sciences and information theory.

of democracy for people who do not already believe in the value of consent, freedom and equality, that is anyone who does not already share in, to a degree, the "democratic faith" (Deneen 2005). The advantage of the argument from collective intelligence is that it tells you why it is instrumentally good to include more people in the decision-process rather than demand of you that you just accept it as a matter of fairness, justice or any other value. In that sense, the argument from collective intelligence supports the conclusions reached on the basis of purely intrinsic defenses of democracy, but gives them a more utilitarian/instrumental/rational foundation than a belief in justice, equality, consent or freedom. One open question is whether these different arguments operate in parallel or depend on each other, and in the latter case whether they reinforce or undermine each other. I have suggested above that the argument from collective intelligence can combine with intrinsic arguments to form a complete functionalist account of democratic legitimacy.

Another normative implication of the argument from collective intelligence is that it rejects the classical divide between aggregative and deliberative democrats because the conception of democracy on which it relies does not fall neatly in either category. The argument from collective intelligence does not make deliberation the centerpiece of democratic reason, since deliberation is seen as just one mechanism of the larger democratic cognitive system. In particular the argument from collective intelligence acknowledges the value and task-specificity of an aggregation mechanism like majority rule as a way to turn a multiplicity of individual judgments into accurate collective predictions, rather than merely a second-best of deliberation. On the other hand, the argument from collective intelligence is distinct from the view commonly associated with

aggregative democracy that politics is only about aggregation of interests and preferences. The argument from collective intelligence is premised on the view shared by deliberative democrats that politics is also, if not essentially, a collective search for answers to collective problems and the question of justice. If aggregation there must be, it is primarily an aggregation of judgments and predictions, not interests.

Finally, the argument from collective intelligence shields epistemically sensitive accounts of political authority from what David Estlund has called "the risk of epistocracy." In the rest of this paper, I would like to challenge parts of Estlund's account of democratic authority, specifically the part that has to do with a "general acceptability requirement," and propose the argument from collective intelligence as an alternative solution.

Estlund is one of the rare democratic theorists to have introduced an explicitly epistemic component into the definition of "democratic authority" (Estlund 2008). He advocates a philosophical framework he calls "epistemic proceduralism," according to which the legitimacy of democratically produced laws comes in part from the epistemic reliability of the procedure yielding those laws.[17] At the same time that he was advocating this epistemic dimension of democratic authority, Estlund remained worried that assuming the existence of a procedure-independent standard of truth, as any even partially epistemic conception of democracy is bound to do, opens the door to "epistocracy," or the rule of the knowers. Indeed, "if some epistemic standard exists, then it would follow that some know better and that the knowers should rule, as in Plato's elegant and repellent Republic" (Estlund 1997: 181). In the same way that opening up the

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[17]   Notice that Estlund focuses on the epistemic reliability of the procedure in general, not the epistemic value of any single outcome.

possibility of discussing the voter's competence may invite restrictions on the franchise, assuming that a certain amount of epistemic success is necessary to political authority may suggest delegation of political choices to a caste of "knowers"—Plato's philosopher kings or any other type of universal knower.

This risk further explains, according to Estlund, the "flight from substance" that has characterized democratic theory in the last twenty years. Deliberative democrats in particular tend to stick to purely procedural approaches to the value of democracy for fear of putting democracy in competition with potentially more reliable collective decision-procedures. Estlund himself, in order to protect his own epistemic approach from this risk, elaborates a complex theory of a " general acceptability argument"[18] that disqualifies the rule of the few before it even has to compete with democracy on epistemic terms. In brief, the blocking move consists in denying that claims to superior expertise on the part of a subset of potential epistocrats would be beyond the reasonable objection of the other members of the group.[19] In Estlund's words, you may be an expert, but what makes you boss?

The strength of Estlund's case is to assume that even assuming the de facto existence of a subset of experts, this need not entail their right to rule, for their claim to rule on the basis of their expertise should not be beyond the reasonable objections of

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[18]   Estlund does not specify further the abstract idea of "qualified acceptability requirement," defending a family of ideas rather than a particular instance of it, and leaving open in particular the definition of who should count as qualified (Estlund 2008: 40).

[19]   Notice that this is an argument distinct from denying that the identification of knowers is possible in politics. Such an argument would be an appeal to a de facto impossibility, i.e., the impossibility to identify universal political "knowers" of the kind dreamt by Plato—people who are systematically better political decision-makers or forecasters than others. Such an argument would not be very strong since there seems to be in our democratic societies a de facto consensus about the existence of political experts: pundits, academics, professional politicians, public intellectuals courted by TVs and newspapers. Obviously, it is not that hard to identify (however mistakenly) people who supposedly know more than others about political questions.

individual citizens. In fact, Estlund mixes the descriptive and the normative here.

According to him, experts cannot be bosses because their claims to expertise *will not* be

beyond the reasonable objection of other citizens, a prediction that follows from

Estlund's assumption that the concept of the "reasonable" loaded in the idea of "general

acceptability requirement" *ought not to* allow for such a consensus of who the experts

are. So, it is not that there cannot be a de facto consensus on who the experts are, it is that

other citizens, in Estlund's view, ought to refuse to surrender their moral judgment on

important matters to anyone (Estlund 1997: 183). There might be a standard of

correctness and even knowers of various degrees, without any moral basis for

epistocracy.

This idea of a "qualified acceptability requirement" corresponds to the non-

instrumental part of Estlund's theory, which is independent from epistemic

considerations. This theory is more complex than I can do it justice here but let me here

focus on where I happen to disagree with Estlund (especially since I agree with much

else[20]). Estlund asserts that his theory of a general acceptability requirement is "the *only*

way to answer" the challenge of epistocracy, "since it is *certain* that there are subsets of

citizens that are wiser than the group as a whole" (Estlund 2008: 40, my emphasis). I

disagree with both the view that his theory is the only way to avoid the risk of epistocracy

and with the positive statement that there are subsets of citizens that are wiser than the

group as a whole, at least if this statement means that *there is a single identifiable group*

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[20]   The argument from collective intelligence would not be possible outside the conceptual space that
Estlund has successfully carved out over the years for epistemic approaches to democracy. I thus agree
entirely with him on the idea that democratic authority is partly epistemic and the view that a concept of
"truth" is not inimical to democratic politics.

of wise men for all political questions.[21] I argue, on the contrary, that for most political questions, under conditions of sufficient cognitive diversity, the group is more likely to be smarter than any a priori defined subset of its members.

The argument from collective intelligence that I endorse is a more radical blocking move to the risk of epistocracy, since it economizes entirely on Estlund's theory of a Rawlsian "qualified acceptability requirement."[22] In a nutshell: the reason why epistocracy is not a tempting option is not because we can never know who the knowers are, or because there can never be a consensus of "reasonable" people on who they are (that is, a consensus meeting the requirements of "qualified acceptability"), but because it can be shown that, in theory at least, the more reliable knower is actually the group as a whole, as opposed to any particular individual or group of individuals within it. Thus, instead of saying that democracy is the default option because there are no knowers or because there are no knowers whose expertise is beyond other citizens' reasonable objections, the line of argument is that the most epistemically reliable knower is the group itself. Even if different subsets of experts might know best on distinct issues, all things equal otherwise the group will generally know better across the board. That is why, regardless of all the other reasons we may have to value democracy, democratic decision-making is a safer bet than versions of the rule of the few.

Conclusion

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[21]   I mean by that that for any question or issue, a subset of the citizenry might be smarter but that they will not be smarter for any question across the boards so that they do not amount to the « universal knowers » required by an epistocracy.

[22]   One important aspect in which Estlund's theory is, arguably, not fully Rawlsian is that his conception of a qualified acceptability requirement does not rule out appeals to the "truth." Estlund insists that "contrary to many readings of Rawls, a qualified acceptability requirement cannot suffice without appealing to the truth" (Estlund 2008: 40-41) but it is still the case that Rawls himself always claimed an "epistemic abstinence" that Estlund (rightly so in my view) rejects.

Let me conclude on the political implications that the argument from collective intelligence, if true, may and should have. I already mentioned that if the goal of representation is to improve the quality of collective decision-making on a manageable scale, the selection of representatives should be concerned more with preserving cognitive diversity and less with raising individual competence of the representatives, however counterintuitive that may seem. An objector might point out that there are perhaps better ways to increase cognitive diversity than by using random sampling, for example using quotas of experts taken from different subcategories. This is true only if you assume that you know what kind of expertise the problem involves. Here I would like to rehearse the Sophist Protagoras'classical and compelling answer to the problem of political knowledge. Explaining to Socrates the rationale for "isegoria"--the equal right of Athenians to speak in the assembly, Protagoras remarks that if the issue is to build a public edifice or a military ship, Athenians only let the carpenters and the ingeneers speak and shame into silence the ignorami. Howerever, when the question is about the public good, that is the general political orientations of the polity, there everybody is invited to speak. My interpretation of the Sophist answer and the practice of isegoria is that the Athenians acknowledged that on some questions there are no expert that can be a priori identified except the group itself.

Another obvious conclusion is that where feasible collective decision-making should be more inclusive and participatory than it currently is. The question of feasibility is of course a major constraint on the argument, especially in societies characterized by a massive division of the cognitive labor between professional politicians and regular citizens. Town-hall meetings may no necessarily be the most promising possibility

anymore but new forms of participation such as those offered by the recent Open

Government initiative offer new avenues for experimentation. We have yet to explore, in

my view, the immense iceberg of collective intelligence in politics.

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