

Princeton/Stanford Working Papers in Classics

An Aristotelian middle way
between deliberation and independent-guess aggregation

Version 1.0

September 2009

Josiah Ober

Stanford University

Abstract: A well-known passage of Aristotle's *Politics* (3.1281a42-b10) concerning the "wisdom of the crowd" offers an attractive and plausible alternative to deliberation and independent guess aggregation, the two currently-prominent approaches to judgment and decision in an epistemic democracy. The *Politics* passage is clarified by reference to Aristotle's discussion of the six parts of tragedy (*Poetics* 1450a6-14).

© Josiah Ober. jober@stanford.edu

An Aristotelian middle way between deliberation and independent-guess aggregation

Josiah Ober. Stanford University. jober@stanford.edu
APSA, September 5, 2009

Epistemic approaches to democracy are concerned with managing information, which includes, in practice, arriving at judgments and making decisions. Contemporary discussions of epistemic mechanisms center on deliberation, understood as a form of reciprocal reason-giving among citizens, and independent-guess aggregation (IGA). Well known examples of aggregating independent guesses include prediction markets and Condorcet juries.

In a spectrum of democratic mechanisms for taking into account diverse and dispersed knowledge, deliberation and IGA seem to stand at opposite poles: Deliberation assumes intense interpersonal interaction among decision-makers. It regards changes of position on the basis of the new information gained in the course of discussions as a valued goal. IGA assumes no interaction among decision-makers. It regards pre-decision communication among the decision-makers, in ways that violate the independence of their individual judgments, as a source of corruption (List and Pettit 2004). Thus, as in some recent work, e.g. by Cass Sunstein (2007), deliberation and IGA are set up as mutually incompatible. Sunstein's dichotomous approach suggests that anyone interested in epistemic democracy must make a choice between deliberation and IGA based, at least in part, on their differential performance characteristics. Yet, given that deliberation and IGA each has desirable features, normatively as well as empirically, the need to make a choice between them seems decidedly unfortunate.

It is arguable, moreover, that neither deliberation nor IGA is, in itself, adequate to the needs of a real-world epistemic democracy, one that must regularly make complex and time-sensitive choices about policy. The currently available models of real-world deliberation and IGA (as opposed to pure models developed in ideal theory), are vulnerable to elite capture via agenda control: Who decides what topic we are to deliberate? Who sets the problem that will be solved by aggregating independent guesses? Ideal-theory versions of deliberation, demanding full attention to equality and a commitment to rules of neutrality, can have no mechanism for closure, and thus cannot offer a way forward in time-sensitive contexts. Non-ideal versions of deliberation are

subject to various sorts of manipulation and domination. IGA, for its part is problematically saddled either with Condorcet's binary choice, or, in more complex versions of judgment aggregation being developed by List and Pettit, vulnerable to cycling based on Arrow's impossibility result. If neither deliberation nor IGA is adequate to the demands of an epistemic democracy, perhaps the spectrum might be filled out – Is there a “middle way”? Hybridization may seem, on the face of it, unpromising because the salient feature of deliberation (mutual reason-giving), violates the salient feature of IGA (independence). Yet the burden of this paper is that Aristotle presents a sketch of a viable middle way -- an approach that offers the possibility of excellent decision-making by groups, yet requires neither the protracted process of reason-giving of deliberation nor the hermetic independence of IGA.

1. Aristotle *Politics* 3.11: The wisdom of the crowd.

In a much-discussed (e.g. Waldron 1995) passage of the *Politics* (3.1281a42-b10), Aristotle claims that, under the right conditions, “the many” judge certain matters better than individuals or small groups. This paper fills out Aristotle's bare-bones account of “the wisdom of the many,” suggests that it is a middle way, and argues that the preconditions assumed by Aristotle are not too demanding for the “wisdom of the group” to function outside ideal theory. Aristotle's highly compressed theory of collective judgment addresses complex decision-making situations, and thus allows us to imagine how diverse expertise might effectively be aggregated by a group of decision-makers confronted with a variety of possible answers.

The relevant passage is laid out schematically as Text 1 on your handout (note that the subdivision of the passage into 8 sections is my own):

1. The many (*hoi polloi*), of whom none is individually an excellent (*spoudaios*) man, nevertheless can, when joined together, be better than those [the excellent few],
 2. not as individuals but all together [*hôs sumpantas*],
 3. just as potluck [*sumphorêta*] dinners can be better than those provided at one man's expense.
 4. For, there being many, each person possesses a constituent part [*morion*] of virtue [*aretê*] and practical reason [*phronêsis*],
 5. and when they have come together, the multitude [*plêthos*] is like a single person, yet many-footed and many-handed and possessing many sense-capacities [*aisthêseis*],
 6. so it is likewise as regards to its multiplicity of character [*ta êthê*] and its mind [*dianoia*].
 7. This is why the many [*hoi polloi*] judge better in regard to musical works and those of the poets,
 8. for some judge a particular part [*ti morion*], while all of them judge the whole [*panta de pantes*].
- (*Politics* 3.1281a42-b10. Trans. C. Lord, adapted).¹

So what, exactly, is going on in this passage? What is the decision process – sometimes called “summation” by students of Aristotle’s philosophy - by which, in the concluding phrase (8), “some judge a particular part, while all of them judge the whole.”² Aristotle’s point (1) is that under the right conditions (more on right conditions in a moment), a group of ordinary people (*hoi polloi*) judge better than a few excellent persons. The group achieves its excellence of judgment *as a group* (2) – it is not a matter of deferring to the single best judgment in the group. Aristotle offers two examples, meant to be familiar to his reader, to explain collective judgment.

2. Fine potluck dinners

The first example (3) is an analogy: the “potluck dinner,” to which each prospective diner brings a different gastronomic contribution. These contributions make up the parts of a whole: that is, a superior dining experience for every contributor. Obviously the potluck dinner, as a whole, can go wrong if the parts, the various contributions, are not both reasonably diverse and individually good. If we assume complete independence of choice (i.e. no diner has a clue what the others are likely to bring), then each diner may just happen to bring the same dish (say, 6 courses of pasta salad). This will not be an excellent meal and, by definition, certainly not better than that provided by one individual. Moreover, potluck dinners are susceptible to free-rider problems: a free-riding diner might choose strategically to bring something poor, anticipating that the others will bring something fine. If each diner fears being stuck with a sucker’s payoff by free-riders, there will be a race to the bottom and the common dinner will be poor as a result.

If the dinner is to be excellent, as Aristotle specifies, the right conditions – the operating assumptions of the contributors to the dinner -- clearly must include the two key elements of social knowledge and social norms or incentives. First: even assuming that they do not deliberate about specific contributions in advance, the multiple contributors must have good reason to expect particular people to bring some particular kind of food or drink. That is, they must know one another well enough to be able to predict what each is likely to bring to the table. Next, there must be some norm or incentive that ensures that each brings something fine to the table. There is nothing mysterious about this process. Anecdotal: I happen to have a group of good friends with whom I have been going on picnics over the last 25 years. We almost never prearrange who will bring what, but we do have a pretty good idea of what sort of thing each is likely to bring. Moreover, there is a norm of contributing fine food and drink. The result, as occasional “outsiders” who have been invited along to our picnics can attest, is that the quality of these common meals is very high. Per Aristotle’s specification, it is arguably better – gastronomically as well as psychologically - than a dinner provided at one individual’s expense.

Aristotle’s potluck dinner analogy, when understood in these everyday terms, gets us some way towards understanding what Aristotle was after in the *Politics* passage. The potluck analogy introduces the issues of parts and wholes, and (by implication) the requirement that the members of the group have social knowledge regarding one another’s particular areas of specialization, and that they share social norms or incentives that foreclose the tendency to free-ride.

3. Judging the parts of tragedy

Aristotle's second example (7) concerns judgment of a musical/poetic production: he states as a matter of fact that *hoi polloi* do judge better (than the few) in regard to "musical works and those of the poets." Aristotle may have a variety of sorts of musical/poetic production in mind here; recent work by classicists has demonstrated anew the richness and diversity of the culture of musical performance in the classical Greek world (Wilson 2000). But it seems quite certain that among the productions Aristotle had in mind was the performance of drama, and especially tragedy – this was, in Aristotle's view and that of modern scholars, the definitive "musical/poetic" venue in classical Athens. At the two annual Dionysian festivals, dramas (both tragedies and comedies) were judged and dramatic poets were awarded first, second, and third prizes. The judges were, in the first instance, a panel chosen by lottery from among the citizens of Athens. In practice the mass audience, by its applause, or lack of it, gave the lotteried judges their cue - as the speeches appealing for the audience's good will in the *parabasis* of each of Aristophanes' extant comedies demonstrates clearly enough.³ It is, I believe, a very likely hypothesis that Aristotle had the mass judgment of the audience in the Athenian theater in mind when he stated that *hoi polloi* judge better in regard to musical and poetic works. So how did that mass judgment work in practice? A brief digression into Aristotle's theory of tragedy can, I believe, help to clarify the matter.

In the *Poetics*, Aristotle schematically lays out six constituent parts (*merê*) that must come together in order to complete a tragic performance: plot (*muthos*), character (*êthê*), diction (*lexis*), thought (*dianoia*), spectacle (*opsis*), and song (*melipoiia*): Handout passage no. 2.

Necessarily then every tragedy has six constituent parts [*merê*], and on these its quality depends. These are plot [*muthos*], character [*êthê*], diction [*lexis*], thought [*dianoia*], spectacle [*opsis*], and song [*melipoiia*]. Two of these [diction, song] are the means of representation: one [spectacle] is the manner: three [plot, character, thought] are the objects represented. This list is exhaustive, and practically all the poets employ these elements, for every drama includes alike spectacle and character and plot and diction and song and thought. (*Poetics* 1450a6-14)

The *Poetics* passages recalls the *Politics* passage; most obviously, both are deeply concerned with character and thought as natural causes and co-determinants of the quality of an action.⁴ Moreover, both passages are concerned with how subsidiary "parts" (*merê*, *moria*: these terms are used interchangeably by Aristotle) constitute a whole. With reference to the potluck analogy, we might think of each of the 6 parts of tragedy as analogous to gastronomic contributions – to the varieties of food and drink that make up a fine meal. But the analogy is inexact in that it is *judgment* of the quality of a performance, not the performance itself, that is Aristotle's concern in the *Politics* passage. In order for a group's judgment of a tragedy to be "best," the group clearly must take into proper account each of the 6 constituent parts; ignoring any part will obviously result in a flawed judgment in regard to the overall quality of the tragic performance. Moreover, the group must give each of the 6 parts of tragedy its proper weight: Aristotle specifies that the 6 parts are ranked in the following order of importance: plot, character,

thought, diction, song, spectacle (*Poetics* 1450a-b). How are these two requirements, comprehensiveness in respect to parts and right weighting of parts, to be accomplished?

In sections 5 and 6 of the *Politics* passage, Aristotle states that *hoi polloi* can, under the right conditions, be like a single person in that the group possesses many sense-capacities, and many sorts of “character” and many sorts of “mind.” In the context of group judgment, we may roughly sum this up as meaning that a group possesses many sorts of expertise relevant to the judgment at hand. Since the example (7) is judgment of musical/poetic productions, and since (so I have argued), tragedy is what Aristotle most likely had in mind, the multiple forms of expertise (that is, specific conjunctions of diverse sensibilities, characters, and minds) in the single-person-like group ought be relevant to the judgment of the multiple parts of a tragedy. Thus, among its diverse membership, the group includes sensibilities, characters, and minds suited to the judgment of tragic plot. And it includes other sensibilities, characters and minds well suited to the judgment of tragic character – and, *mutatis mutandis*, of tragic diction, thought, spectacle and song.

Aristotle’s point here seems to be that a single highly talented individual (or a few individuals) may indeed have the sensibilities, character, and mind to be a very good at judgment of one, or several, or the 6 elements of tragedy. But the larger group, because of its greater diversity, possesses the relevant forms of expertise in greater abundance than any one or any few. Thus, if the group is able to function as a quasi-person, in that it is able to bring to bear its broad expertise relevant to each of the constituent parts of the tragedy, *and* if it is able to give the right weight to each of the parts in its overall judgment, then the group will judge better.

4. Collective virtue and practical wisdom

It is only when the decision-making group is of the right sort that the summation process yields superior judgments. Key to the group’s capacity to judge supremely well – i.e. to act as a hyper-qualified quasi-person -- is its possession of virtue and practical wisdom, the key attributes that enable individual persons to exercise superior judgment (section 4). Aristotle has specified that the group is not made up of individually excellent people – that is people with high levels of “complete” virtue and practical wisdom – i.e. the group does not consist of the sort of superior persons depicted as ideal moral subjects in the *Nicomachean Ethics*. Rather, each individual in the imagined group of *hoi polloi* possesses only a “part” (*morion*) of virtue and practical wisdom: In order for the group to function properly as a judging agent, those parts must be conjoined into something resembling a coherent whole. This does not require special metaphysics; but, in the context of the *Politics*, it does require that the group be collectively mindful of the common good, thus meeting the base-line Aristotelian criterion for a body of persons acting justly. The group must also (per the implications of the potluck analogy) be sensible to the loci of relevant kinds of expertise among its membership. The group’s members must be sincerely concerned with getting the best solution, and each of them must pay attention to the opinions/responses of those who are (in the tragedy example) especially musically adept in respect to judgment of the singing, to those who are known to be especially adept at visual art in respect to judgment of the spectacular staging, and so on.

Aristotelian summation arrives at a right answer by a path that is in some ways similar to, but in other ways quite different from, IGA processes such as Condorcet's well-known jury theorem. Like Condorcet (1785), Aristotle begins with an assumption of a group of preference-sharing decision-makers, each of whom believes that there is a best choice and sincerely seeks that best choice. Neither Aristotle nor Condorcet confronts the question of divergent interests or strategic voting. Unlike Condorcet, Aristotle's decision-makers can choose among multiple options (e.g. among three competing tragic poets). Unlike Condorcet, Aristotle emphasizes the central role played by intra-group diversity: Diversity is what increases the total amount of available expertise beyond that of any one individual, and thus diversity is what grants the group its potentially superior capacity for judgment. Moreover, unlike Condorcet, Aristotle can assume that, were they to decide as individuals, most of the individuals in the decision-making group would be likely to choose wrongly.

Like Condorcet, Aristotle need not assume that the group deliberates prior to its judgment. But unlike Condorcet, Aristotle must assume that the members of the group have some knowledge of one another: some prior knowledge of who, among the group's membership, is expert at what. Instead of directly aggregating the marginal likelihood of individual correct judgment on the issue itself, Aristotle assumes, I believe, that each individual takes his lead from the response of those persons in the crowd who are known to be most capable of rightly judging a particular aspect of the issue. This seems to me the most plausible sense in which to take the key phrase (section 8): "some judge a particular part while all of them judge the whole."

Aristotle's theory replaces Condorcet's assumption of marginal likelihood of correctness *on the matter being decided* with an assumption that people have diverse forms of expertise and a relatively accurate knowledge of who is expert at what: The assumption of "marginal likelihood of correctness" is deferred: away from highly demanding technical knowledge about the substance of the matter at issue, to a less demanding form of social knowledge. Most individual decision-makers need not be accurate judges of e.g. the quality of the singing, so long as they pay attention to the reaction of someone in group who is an adequate judge of singing and who is both clear and trustworthy in signaling that expert judgment.

5. Weighting multiple parts

There remains the key issue of weighting. As we have seen, Aristotle rank-ordered the importance of the 6 elements of tragedy to the quality of a tragic performance, so he must have assumed that a group skillful at judging tragedies would get the weighting right. If we specify that the group will express its judgment in the form of a vote, the vote will arrive at the correct answer under the following circumstances: The correct choice about weighting lies in the center of the distribution of judgments regarding weighting and the majority represents this center. In the process of judging the relative weight to be assigned to various expert judgments, by finding the center of the distribution, the value of large-group voting is clearly manifest. It explains why, in the tragedy example, a small group of six experts (one specialist in each of the six Aristotelian parts of tragedy) would not do better: Each expert would be unlikely to give the right weight to the other experts' domains in making the overall judgment: The song expert can be expected to over-rate the role of singing and so on. As contemporary work

on expertise has shown, expert competence is often limited to judgments made within a given domain and experts are not necessarily good public decision-makers even within their own domains. Neither a single expert nor a small but diverse group of experts is likely to come to the right decision on a complex matter like judging dramatic performance by Aristotle's standards.⁵

What is needed is a body of decision-makers capable of recognizing (through prior social knowledge) who really is expert at what part, and also capable of deciding (by voting) how much weight to give various domains of expertise in formulating an "all things considered" judgment. Exactly how that two-stage process works in actual practice is not easy to specify in light of the brevity of the *Politics* passage. But, as in the potluck dinner analogy, I think Aristotle intended his readers to draw on everyday experience to fill in the gaps: he could safely assume that most of his classical Greek readers had been to potluck dinners and attended the theater. His examples remain accessible today. I have already shown that potluck picnics are ordinary features of some modern folks' lives. Moreover, while the Athenian theater of Dionysus was no doubt a special venue, the experience of collectively judging a poetic/musical performance remains common.

Imagine you are in the audience of an opera (which has some obvious analogies to Greek tragedy in regard to performance). Suppose that the audience is made up of experienced opera-goers, and includes people who are widely acknowledged as experts in various technical aspects of opera (singing, staging, and so on), and that the applause of the crowd constitutes its collective judgment regarding the performance's quality. The group does the work of gauging expert response and weighing the various parts in its "all things considered" judgment without much conscious thought on the part of each of its members. The decision requires social knowledge about who is relatively more expert at which part, but it does not require deliberation: the clapping is sustained or brief, focused on a particular singer or directed at the whole company, depending on the group's collective judgment. As an individual, you may disagree with that judgment, but the chances are that the audience as a whole really does know better than you do because it is drawing on a more diverse internal body of expertise and is more capable of fairly weighing the value of various constituent parts.

In Aristotle's scenario of the excellent-judging group, the process of aggregation works because the group in question is diverse in the right way (that is, contains diverse sorts of expertise) and not diverse in any wrong way that would prevent the formation of a quasi-person with something resembling relevantly complete virtue and practical wisdom. If the group is diverse in the wrong way, e.g. made up of factions seeking to act strategically to achieve some outcome that is not in the common good, the summation process will not get off the ground. If factions come to the process with preconceived notions of the outcome they desire and vote accordingly, then the group's members will not pay appropriate attention to the various experts in their midst. If experts hide what they know, if they refuse to signal, clearly and accurately, their true opinions, then the diversity of expertise will be of no value to the process of judgment.

In order for the group, as a whole, to judge well, in order for "all of them judge the whole" and thereby arrive at the best answer, each member of the group must possess a modicum of virtue and practical wisdom. But the level of individual virtue and practical wisdom can be low so long as it is aggregated such that the group as a whole achieves a high level of virtue and practical wisdom. In this context virtue is, I would suggest,

manifest in choosing cooperation and practical wisdom means choosing to cooperate for rational reasons. That, in turn requires that the group shares political institutions that give people good reasons to cooperate. Groups lacking such institutions are unlikely to manifest the distinctive characteristic of excellence in respect to judgment. Aristotelian collective wisdom has preconditions that are demanding but not utopian. It is important to remember that Aristotle's two examples are presented as facts about the world: some common feasts *are* superior, and some groups *do* judge musical poetic contests especially well. If my argument regarding tragedy is right, one of Aristotle's examples of a group manifesting collective wisdom would have been the theater-going population of democratic Athens.

6. Conclusions

The most important point, for the purposes of this panel, is that Aristotle's excellently-judging group must be diverse in the right way -- it must include a diversity of distinctly different expertise-sets.⁶ Just as there would be no qualitative culinary benefit in a common feast to which each diner brought the same pasta salad, if the group were perfectly homogeneous in respect to what Aristotle calls sensibility, character, and mind, each of its members would have expertise similar to that of every other member, and so the decision could be made just as well, and more efficiently, by any one of its members. The Aristotelian process of summation – which, as I have argued, is a *via media* between deliberation and independent guess aggregation, adds value to large-group judgments only when when people bring to the table knowledge that is at once distinctive and valuable.

The Aristotelian approach is worthy of our consideration, among other reasons, because it is grounded in ordinary human experiences. While in some ways demanding, there is nothing mysterious about the “middle way” mechanism of collective wisdom. The ways in which a collectivity achieves excellence in judgment ought, Aristotle suggests, to be readily understood by anyone who has enjoyed a pickup meal with good friends, or has paid attention to the audience's response to a dramatic performance. If Aristotle is right about this, as I suppose he is, it suggests that collective wisdom does not require the highly demanding communication conditions of ideal-type deliberation, or the complete independence that is the foundation of IGA. That conclusion might, in turn, help contemporary students of political decision-making to progress beyond the “deliberation v. IGA” debate.

BIBLIOGRAPHY

- Condorcet, Jean-Antoine-Nicolas de Caritat. 1785. *Essai sur l'application de l'analyse à la probabilité des décisions rendus à la pluralité des voix*. Paris,: Imprimerie Royale.
- Csapo, Eric, and William J. Slater. 1994. *The context of ancient drama*. Ann Arbor: University of Michigan Press.
- Ericsson, Anders. 1999. "Expertise." Pp. 298-300 in *The MIT Encyclopedia fo the Cognitive Sciences*. Cambridge, MA: MIT Press.
- Keyt, David. 1991. "Aristotle's Theory of Distributive Justice." Pp. 238-78 in *A Companion to Aristotle's Politics*, edited by David Keyt and Fred Dycus Miller. Oxford: Blackwell.
- List, Christian, and Philip Pettit. 2004. "An Epistemic Free-Riding Problem?" Pp. 128-58 in *Karl Popper: Critical Appraisals*, edited by Philip Catton and Graham Macdonald. London: Routledge.
- Marshall, C.W., and Stephanie van Willigenburg. 2005. "Judging Athenian dramatic competitions." *Journal of Hellenic Studies* 124:90-107.
- Page, Scott E. 2007. *The difference: How the power of diversity creates better groups, firms, schools, and societies*. Princeton: Princeton University Press.
- Sunstein, Cass R. 2007. "Deliberating Groups versus Prediction Markets (or Hayek's Challenge to Habermas) " *Episteme: Journal of Social Epistemology* 3:192-213.
- Waldron, Jeremy. 1995. "The Wisdom of the Multitude: Some Reflections on Book III Chapter 11 of the Politics." *Political Theory* 23:563-84.
- Wallace, Robert W. 1997. "Poet, Public, and 'theatrocracy': Audience Performance in Classical Athens." Pp. 97-111 in *Poet, public, and performance in Ancient Greece*, edited by Lowell Edmunds and Robert W. Wallace. Baltimore, Md.: Johns Hopkins University Press.
- Wilson, Peter. 2000. *The Athenian institution of the Khoregia. The Chorus, the city, and the stage*. Cambridge: Cambridge University Press.

NOTES.

¹ Waldron 1995 underlines the importance of this passage emphasizes its deliberative character. In a book in progress, Paula Gottlieb argues persuasively that Aristotle is neither being ironic nor presenting someone else's argument here. She shows that the optimistic account of democratic decision-making in this and related passages is compatible with the discussion of the unity of the virtues in *Nicomachean Ethics* and *Eudemian Ethics*, because "vices are a disunited lot whereas only the virtues cohere in a unified and coherent way."

² On the summation argument, see Keyt 1991.

³ At the two major festivals, the tragic prize was for a set of three tragedies; the comic prize for a single comedy. Athenian audiences as judges of drama: Csapo and Slater 1994; Wallace 1997; Marshall and van Willigenburg 2005.

⁴ Cf. the passage preceding that cited in the text: "And since tragedy represents action and is acted by living persons, who must of necessity have certain qualities of character (*êthê*) and thought (*dianoia*)—for it is these which determine the quality of an action; indeed thought and character are the natural causes of any action and it is in virtue of these that all men succeed or fail— it follows then that it is the plot which represents the action. By "plot" I mean here the arrangement of the incidents: "character" is that which determines the quality of the agents, and "thought" appears wherever in the dialogue they put forward an argument or deliver an opinion." *Poetics* 1450a

⁵ Ericsson 1999, 298, makes the point that "the superior performance of experts is often very domain-specific, and transfer outside their narrow area of expertise is surprisingly limited."

⁶ Cf. Page 2007 and Aristotle *Eudemian Ethics* 1216b31: "Everyone has something of his own (*oikeion*) to contribute to the truth."