Predicting When the Mob is Smart

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Review of *WISER: Getting Beyond Groupthink to Make Groups Smarter*, by Cass R. Sunstein and Reid Hastie

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Group decisions can be wise, but often they are not. We can observe the goods and bads of group decision making every day in politics, in business, in clubs, and in our families. As we can all attest, group decision making can be painfully slow and lead to irrational or plainly incorrect outcomes. If only numbers mattered, then many minds should always beat one mind. Unfortunately, the reality of group decision making is much messier. Still, despite all the justified complaints about groups, we know that they often are – or at least can be – better than the available alternatives. Neither furnishing one individual with (limited) dictatorial power nor simply throwing the dice look like plausible candidates to reliably beat group decision making. What we need is a better understanding of the factors that can make groups wiser than the alternatives. Such understanding would enable us to use the tool of group decision making more effectively. It would also allow us to ditch group decision making when it is unlikely to deliver.

Cass Sunstein and Reid Hastie take on this challenge. Drawing on new empirical results in the wake of the 'behavioral revolution' in the social and brain sciences, they identify mechanisms that make groups fail or succeed. Success is here defined as making decisions that are factually correct (or best). In a field that has literally exploded and fragmented into myriads of highly specialized debates in several sub-disciplines, Sunstein and Hastie act as synthesizers and translators, offering non-experts an overview of a technical and sometimes arcane literature. In their goal to popularize behavioral economics they follow in the footsteps of, for example, Kahneman's *Thinking Fast and Slow*, [Dan Ariely](#)'s books on irrationality in decision making, or Sendhil Mullainathan and Eldar Shafir's *Scarcity*. When it comes to group wisdom, the most relevant previous contributions include James Surowiecki's *The Wisdom of Crowds* and Scott Page's *The Difference*. In contrast to the former two, Sunstein and Hastie draw much more on recent experimental literature. The good news: it turns out that there is quite a bit of empirical evidence buried in specialist literature that can help us to pin down the factors that make groups wise. But there is also a problem: much of the research on biases and errors of judgment is geared towards individuals, not groups. More about this shortly.

Sunstein and Hastie begin by revisiting Irving Janis's *Groupthink*. While acknowledging Janis's success in creating an evocative term to describe group failures, they also point out

that the basis of empirical evidence for 'groupthink' is very limited, and that later attempts to replicate groupthink experimentally had at best mixed success. Sunstein and Hastie conclude that 'Janis's evocative account can be seen as akin to a work of literature' (7). Their plan is to improve on Janis by drawing on the latest empirical evidence.

One core mechanism leading to the failure of group decision making is 'happy talk', the kind of communication that is intended to please superiors and colleagues (9). What Sunstein and Hastie recommend instead is a good deal of 'anxiety', a mixture of critical thinking, asking probing questions, and a willingness to swim against the stream. What they mean is not the kind of anxiety that makes you curl up in a corner. Rather, it is a form of curiosity driven by a healthy dose of pessimism. (Writing this from a European – and especially German – perspective, I wonder whether the need for more 'anxiety' might be specific to North America. But perhaps this is a naming problem more than anything else. While I don't think that, generally speaking, Germans need more anxiety, they do need more non-conformist critical thinking.)

The rest of *Wiser* comes in two parts. Part I contains the 'bad news,' explaining why groups often fail to make good decisions. Part II shows how group can succeed nevertheless. Some of the topics covered are old acquaintances for the faithful Sunstein reader, especially group polarization, cascades, crowd wisdom and prediction markets, but there is also a lot of new material.

One fascinating question addressed in Part I is whether individual biases and errors get amplified in groups. Consider, for instance, the representativeness heuristic. Individuals who use this heuristic make their judgments of probability based on similarity or resemblance, rather than probabilistic thinking. Using similarity-based cues is often a fast and frugal way to make probability estimates, but it can also go badly wrong. For example, a doctor might test you for a rare disease (occurring in 1 one of 10,000 people). Suppose the disease comes with some symptoms similar to an ordinary flu, but there is also a test that is 99% accurate (which means it produces false positives when the patient is not ill and false negatives when the patient is ill in 1% of cases, respectively). A quick calculation tells you that the probability of you having the disease after a positive test increases from 0.01% to about 1% after being tested positive (applying Bayes' formula, it's [99% * 0.01%] / [99% * 0.01% + 1% * 99.99%] = 0.98%, to be precise). The test is simply not accurate enough to draw stronger conclusions because the very few expected genuine positives are drowned out by much more expected false positives. But now suppose that you, with your positive test result, also have flu symptoms. To the doctor you look very much like a patient with the rare disease. So the representativeness heuristic kicks in and he concludes that you have contracted the disease, even though it is still more likely that you just have a flu and an erroneous test result. And now comes the interesting point: Sunstein and Hastie cite evidence that group deliberation

typically *amplifies* rather than reduces the errors caused by the representativeness heuristic. Sometimes the quality of group decisions is even worse than the average individual decision, following the principle 'garbage in, more garbage out'!

More systematically, the evidence collated by Sunstein and Hastie and the theoretical considerations they add suggest that biases and heuristics known to affect all individuals i*n the same way* are likely to be amplified in groups. Because the representativeness heuristic tends to affect us all and we all tend to be biased by it in the same way, we are likely to be even more affected when deciding as a group. The same tends to be true for overconfidence bias, framing effects, or the sunk-cost fallacy.

On the flip-side, some biases and fallacies affect us all, but all in *different ways*. The availability heuristic, for example, is used when people estimate probabilities by using other examples that come to mind. The good news is that in sufficiently diverse groups, different individuals think of different examples, so that the bias that affects individuals turns to random noise on the group level, washing out statistically. Something similar is true for the egocentric bias (the mistaken belief that others tend to think the way we do). It is easy for one person to fall for the egocentric bias, but a diverse group will quickly remind individual members that their views are not necessarily shared by others.

Analyzing how well-known individual heuristics, biases and fallacies scale up to the group level is one of *Wiser's* central contributions. Sunstein and Hastie's second important theme is an investigation of the mechanisms that make individuals offer 'happy talk', uncritically repeating what others say, or simply following in the footsteps of a dominant leader. Two pathways to conformity can be distinguished. On the one hand, group communication provides information. If I hear that a large majority of my fellow jurors think the defendant is guilty (or a large majority of my fellow board members predicts that the new product won't sell), I might ignore my own doubts and take their opinions as overwhelming evidence for guilt (or failure). New information makes individuals change their mind, and this can be individually though often not socially rational. On the other hand, there is social pressure. Perhaps I am not at all convinced by the evidence provided by the other jurors for guilt. I might still think that the best evidence suggests that the defendant ought to be acquitted. But because I feel social pressure, I do not dare to disagree and vote to convict (or I fail to point out reasons why the product might sell like hot cakes). Both informational signals and social pressure can lead to suboptimal use of available evidence. In the worst case, it leads to cascades in which individuals that are supposed to reveal their own evidence are already convinced by previous evidence or feel social pressure to go with the stream. Either way, these individuals do not reveal their own evidence, and the group loses important information, increasing the probability of wrong decisions.

Another important mechanism that leads groups astray is the 'common knowledge effect'. Put roughly, information that is known by all people in the group is much more likely to be reinforced in group deliberation than information that is known by fewer people. (The term 'mutual knowledge effect' would be preferable for reasons explained [here](.).) The common knowledge effect is another reason why biases that affect all individuals in the same way tend to be amplified in groups. It also leads to an astounding failure of rationality that has been replicated by social psychologists many times: If one provides different individuals in a group with different pieces of information that are jointly necessary and sufficient to solve a problem, many deliberating groups fail to aggregate and draw inferences from these distributed pieces of information to solve the problem. Groups tend to be bad at sharing information, and most private information gets drowned out by the information promoted due to the common knowledge effect. Why is this? Sunstein and Hastie suggest that people 'prefer to hear information that is commonly held' (95), possibly because it is reassuring for individuals to agree with others.

What lessons can be drawn from these failures of group judgment? In the more optimistic Part II of the book, Sunstein and Hastie suggest that we should take on board an insight from computer science: algorithms for finding a good (not necessarily the absolute best) solution in a complex environment need to do two things: First, come up with many creative candidate solutions; second, submit these candidate solutions to a rigorous selection process to find the best among the candidates available. This approach is 'evolutionary' in the sense that it combines a creative process (equivalent to mutation and recombination) with a selection process (reproduction or failure to do so). In the creative process the thinking process needs to be open. The group benefits from diversity, and must avoid conformity pressures, falling prey to the 'common knowledge effect', and engaging in 'happy talk'. In the selection process, the procedure must be tight and safeguards must be in place to ensure that principles of rational choice prevail over biases. Guided by the general idea of the two-step search procedure, Sunstein and Hastie propose a number of concrete measures to improve group decision making, among them to create a culture of creative thinking in which dissent and adding new information is rewarded, while 'happy talk' is not.

With suitable background conditions, the wisdom of crowds can help to do well in the second part of the exercise, the selection of the best alternative from a fixed agenda. If there are many people who are better than random at voting for the best solution, and if their votes are independent, then the majority vote of large groups is very likely picking out the best solution. As Sunstein and Hastie point out, this optimistic result, first presented by the Marquis de Condorcet and therefore now known as the 'Condorcet jury theorem,' relies on demanding assumptions. The easiest and most obvious way to undermine the wisdom of crowds is to make voters copy each others' votes. But the practically more important threat is that all voters are influenced by the same common causes: they might be influenced by the

same bias or fallacy (as discussed above), they might watch the same TV station, or they might be influenced by the same mistaken economic theory. Sunstein and Hastie caution that sometimes 'big mistakes will result from relying on averages' (155-6). Recent work on jury theorems shows more precisely under which conditions groups can succeed by aggregating opinions, and how the success depends on the interplay between private evidence and common causes (and I cannot resist shamelessly self-promoting a paper by [Dietrich and Spiekermann] in that context).

The last substantial chapter in *Wiser* deals with the '[c factor]', a variable that supposedly reflects a form of 'collective IQ' (208). This variable is a statistical construct (a so-called latent variable), but so far the construct appears to be remarkably successful in predicting the problem-solving capability of groups. Factor c shows a high correlation with the performance of group members in a social perception test, with the evenness of participation in the group, and with the number of women in the group. Why precisely factor c is so successful in predicting group performance (and whether these results hold across many different tasks) still requires further investigation. Sunstein and Hastie are intrigued, but they are also careful not to over-interpret these correlations. It is remarkable that factor c performs much better than, for instance, the IQ of the average group member when predicting group success. Intelligence and cognitive abilities alone are apparently insufficient to make groups decide well, while social skills are more important. This ties in well with the general theme of Sunstein and Hastie's book, as the right sort of social skills would promote the kind of high-quality critical deliberation that can prevent cascades, the amplification of biases, or social pressure to conform. More research is required on factor c, but this is a promising line of inquiry. We may hear much more about it in the future.

Overall, *Wiser* is an inspiring book that usefully draws together empirical and conceptual insights about group decision making. That the book is published by the Harvard Business Review Press suggests that the target audience is not primarily social scientists but practitioners. Speaking as a social scientist, it is unsurprising that there are a few aspects of the book that I find too business-oriented. This is particularly true for some of the anecdotes that appear to come straight out of the business-book sausage machine. Also, I would have enjoyed more expansive references to the experimental literature to make the book more attractive for ambitious readers wanting to dig a little deeper. Some of the most important junctures in the book (for instance, about error amplification in groups) would have benefited from a more careful documentation of the empirical sources. Perhaps *Wiser* suffers from being so cutting edge: there simply is not that much good quality empirical evidence about group problem solving, as most of the literature on decision failures takes individuals as the plausible starting point.

When I read my first Sunstein book (*Why Societies Need Dissent*) as a doctoral student about 10 years ago, it was a revelation. Here was someone putting complex phenomena into simple (but not too simple) terms, linking up technical literatures with the wider outlook of democratic and constitutional theory. Suddenly the social sciences looked even more interesting and more important. Sunstein and Hastie's *Wiser* will, I think, have a similar effect on many readers. It makes important current debates in the social sciences accessible to wider audiences. It is simple but not too simple. And it encourages people to think about their own experiences of group decision making, and how to make groups decide much better.

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