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GROUPTHINK
to collective
intelligence

A conversation with
Cass Sunstein

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> ILLUSTRATION BY TIM O'BRIEN

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From **GROUPTHINK** to collective intelligence

A conversation with Cass Sunstein

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GROUPTHINK is routinely used to explain episodes of disastrous group decision making ranging from the Bay of Pigs fiasco to the Enron scandal. Yet, despite being a fixture of the business press and the popular consciousness alike, the concept has seldom received the rigorous scrutiny it deserves.

Cass Sunstein and Reid Hastie's new book *Wiser* is devoted to the subject. *Wiser* outlines how the explosion of discoveries about cognitive biases in decision making described by Daniel Kahneman in *Thinking, Fast and Slow* enables us to put the intuitive notion of groupthink on a scientific foundation. A key theme is that poorly structured groups, rather than dampening or canceling out individual-level cognitive biases, often amplify and cascade them.

Sunstein and Hastie's other major goal is to offer practical advice on how to promote the opposite of groupthink: collective intelligence, or what James Surowiecki called "the wisdom of crowds." Their ideas range from the organizational (inquisitive and self-silencing leaders, red teaming, devil's advocates, role assignments, and rewarding success at the group level) to the methodological (the Delphi Method, prediction markets, and playing Moneyball) to the technological (using Internet technology to elicit ideas and pool partial fragments of information). The final chapter contains a fascinating surprise—let's just drop the term *Factor C* for now.

Cass Sunstein, aside from being a widely cited legal scholar and University Professor at Harvard, is a former administrator of the White House Office of Information and Regulatory Affairs in the Obama administration, and a prolific author. He co-authored (with Richard Thaler) *Nudge*, the choice architecture manifesto that has influenced the global behavioral insights movement.

Jim Guszcza: The subtitle of your book is *Getting beyond groupthink to make smarter groups*. What is groupthink, and where did the concept originate?

Cass Sunstein: The idea comes actually from the 1970s, from a social scientist named Irving Janis. The idea basically is that in groups often there are conformity pressures that mean that people will shut up and they won't tell the rest of the group what they need to know. Janis was particularly concerned about what would happen in politics, in the White House, in government, but there are business applications, too.

The famous political example was when President Kennedy went into Cuba for the Bay of Pigs invasion, which was quite a disaster. The problem in terms of groupthink was that there were people in the White House who actually had doubts and questions but they never expressed those doubts and questions because of conformity pressures within the group.

So the idea is that a government is at risk of not getting information that the participants in the process have because they are colleagues and friends, and are working with one another.

And we can see cases in business within the last years—I don't want to call anyone out in particular—but there are famous mistakes made for example by movie studios, banks, and so on, where groupthink meant that people wouldn't get information they needed.

JG: So groupthink helps explain how groups of even the best and the brightest can fail even though everybody is well meaning and they all get along really well.

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CS: Absolutely. You can have people who are really smart, who are experts in their field, but who aren't disclosing what people need to hear because of the nature of the group.

One thing we've learned since the 1970s is that there are two different things going on in what's called groupthink. One is sometimes people are quiet because they don't want to put themselves at risk; they don't want their boss or their colleagues to think that they're malcontents. They want to look like good colleagues going along with the program.

The other thing that's actually very different is that people might not be so concerned about preserving their reputation within the firm or the government office, but they might just be naturally respectful of the views held by their superiors or colleagues. So we might think: This course of action seems to me silly or dangerous; but if everyone else thinks it's good, then I'm probably wrong; and why should I gum up the works?

What we've learned more about since the 1970s is that often when people in, say, a mayor's office or a company or a religious organization or university shut up it's because they are reasonably thinking: "I'm a humble person and the other people think this idea is great, and seem pretty excited about it."

JG: There is the popular image of being a team player: being supportive and telling people yeah, things are going great; and if there is something that other people might not want to hear maybe I just won't say it.

But an implication of what you're saying is that this is actually a *bad* way to be a team player. In some ways being a team player means telling people things they don't necessarily want to hear, or going against the prevailing wisdom of what people are saying.

CS: I think we need a new perception of a team player. In many countries, a team player is someone who, as you say, goes along with the group, smiles, is congenial, and seems happy with the direction things are going. And someone who seems disagreeable or puzzled or not happy with the current direction—it's like they're poking their finger in the eye of the organization.

But we really need people who are going to do some of that poking. That's often the best way to be a team player, because you're going to keep people on their toes and sometimes redirect the whole organization.

Similarly in cases that involve economic decisions: If you have an investment club—and there is data on this—investment clubs where people get along, they're friendly, they have dinner together, often will lose a lot of money; whereas the investment clubs in the United States that do the best are the ones that don't socialize too much. But boy do they exchange a lot of information.

JG: In his original book on groupthink, Irving Janis said that groupthink results in "a deterioration of mental efficiency, reality testing and moral judgment." I don't think your book dwells a lot on that last aspect concerning deterioration of moral judgment, but you seemed to touch on it. Is that something that has been picked up in the recent research on groupthink or not so much?

CS: It's implicit. I would say that Janis, who was the great publicist and theorist—not the deviser of the term, but the publicist and theorist—of the word groupthink, he's a great, great figure. But actually it's very hard to figure out from his book what his precise hypothesis is and whether it is true. So in our book we're actually very critical of the idea of groupthink. We should go beyond groupthink, which is an idea that can't be so well tested.

What has been tested is that groups that are starting with a defined position tend to end up with more extreme, more confident, and more cohesive versions of that position. That's called group polarization. It's a specific kind of groupthink that has clear (and testable) implications.

If on a jury you have a group of people who are very upset about corporate misconduct—and we do have data: Reid Hastie, Danny Kahneman, David Schkade, and I did a lot of work on this—their group judgment will typically be more severe than the median judgment before they talk to one another. And while there isn't an objective measure of how morally charged up people should be in the face of misconduct, some of the relevant misconduct in our studies just wasn't so bad. But people egged each other on to get more upset.

It's predictable that if you have people who are morally okay with conduct that's kind of bad, and their judgments aren't so severe, then the group is going to end up less upset than the median individual. That can produce a high degree of leniency.

JG: You mentioned that Janis's original book from the 1970s was more of an intuitive description than a precise hypothesis to articulate and test.

And a lot has happened since then. In the last 30 or 40 years there's been a kind of "Kahneman explosion" of research in psychology and behavioral science. Books like Kahneman's *Thinking, Fast and Slow* and your own *Nudge*, written with Richard Thaler, have made concepts like framing, the availability heuristic, anchoring, optimism bias, and overconfidence bias part of everyday conversation.

You've now connected behavioral economics with the idea of groupthink and given us interesting hypotheses that we can test and learn from. How, in your view, can behavioral economics help us understand how group decisions go wrong?

CS: What we don't have in the public domain, and I hope our book will help on this, is an understanding of how those mistakes at the individual level can translate into group-level decisions and group-level mistakes.

For example, individuals sometimes make bad risk judgments because they get scared because something terrible happened in the recent past. Or individuals are too optimistic or individuals don't plan well, they're too unrealistic about how long it's going to take to finish projects. What happens at the group level? We have pockets of research that show that very frequently—not always, but very frequently—individual mistakes get amplified and aggravated at the group level. And there is a striking finding that if groups are structured well, they won't suffer in this way.

But the basic idea is that if you have a group of people who are optimistic about how something is going to work out as individuals, then as a group they're going to be still more optimistic than they were as individuals. So that can create terrible problems for, say, a governor's office or a parliament. Similarly, for a company that's trying to figure out whether to invest in a particular enterprise if they are, as individuals, optimistic, then the group is going to be still more optimistic. That's really bad.

There are some things that do actually get corrected. One thing that social scientists have been pretty interested in is egocentric bias, where people tend to think that other people are a lot like them. This does get corrected in group decision making, and that's a cool finding. The reason is that, well, there are other people in the group and if it has a degree of diversity and people who aren't like me, then the egocentric bias tends to get softened.

But generally, unless groups are shrewd and careful, the individual biases get amplified. Of course the successful groups either intuitively know how to be shrewd and careful, or they know something from their own experience, or even from reading some of the literature, they know what to do to prevent these risks.

But the major finding (which I'm hoping we will get a handle on in the next generation of research) is that the behavioral biases that individuals show, groups also show—and sometimes worse.

JG: One fascinating aspect that you and Professor Hastie talked about is what are called “hidden profiles” or unshared information, and “cognitively central” people. Can you say a few words about that?

CS: In some ways that's the most fun part or the most revealing part of our discussion of group errors. Suppose you have a group of people who all have, let's say, bits of information about a job applicant or about a course of action they're contemplating. But a few of them have information that is uniquely held by them. So one person knows one thing that no one else knows, and another person knows something that no one else knows. The usual result, in such cases, is that the group will be influenced by the shared information and not the unshared information. It's just not going to come out. And that's kind of tragic, because it means that individuals have material that can correct a group error. But the group never hears it, because it's uniquely held.

There are some people who are cognitively central, in the sense that what they know, everyone else knows. They're not necessarily the leaders or the highest status people. But people who know things that everyone else knows turn out to be really important in group decisions. I'm sure all of us have seen this occasionally, when there's someone in the room who knows something that everyone else knows, and that person kind of looks like someone who can be the “A” student or the kind of congealer of the group's decision making.

Now suppose someone is cognitively peripheral. It's kind of an unlovely term, but cognitively peripheral means what they know, no one else knows. They tend not to matter very much, unless the group is really smartly structured.

JG: And that's terribly ironic, because very often the most innovative ideas, and the things that the group really wants to know, are unfamiliar things that few people know. That's the whole point of a group—to elicit those hidden bits of knowledge.

CS: Completely. Say you've got a good company in the area of technology—we all know which some of them are. They tend to be terrific at finding ways that the

cognitively peripheral people don't get ignored in the deliberation. And I was fortunate to have White House experience. I know that some of the things that went very well in the first term of the Obama administration went well because there was someone who was cognitively peripheral who was not ignored; who was invited by someone who mattered to speak; and they ended up pointing out something that turned out to turn the room.

JG: In part two of your book you talk about strategies for making groups smarter. In one chapter you talk about eight different strategies for warding off group failure, and ameliorating these biases at the group level, and the first one was about inquisitive and self-silencing leaders. That reminded me of a quote from Bill Clinton. He said that when people are insecure, they'd rather have somebody who's strong and wrong rather than weak and right. I think in business, the analog of that is that people who want leaders who are assertive and extroverted and decisive, and have this aura

“Jobs was, in my view, a kind of brilliant, intuitive, behavioral scientist who knew that if you make things complicated and non-intuitive, they may be useless... I think he was... a choice architect of world historical calibre.”

of certitude about them. And again, maybe that's one of those intuitive ideas that doesn't bear closer scrutiny. You almost say the opposite when you discuss the need for inquisitive and self-silencing leaders.

CS: There are different stages where leaders should have different attitudes toward their own inclinations. In stage 1, the leader is trying to figure out what to do. It could be whether you embrace a new product, or you green-light something that is kind of a risk. Or you commit to a certain deadline. Or you initiate military actions. Or you do something that's going to help small business, if you're in a governor's office.

In the stage where you're figuring out whether to do those things, I think it's really important for leaders to start out without giving clarity to the people they're leading about what they're ultimately going to do. The reason is that if they give clarity to people at the decision stage, then they get everyone to shut up and to praise the leader for his wisdom and foresight.

In the government, I noticed after I got confirmed by the Senate, that if I said something about my inclination, my staff often acted like it was extremely intelligent, even if it really wasn't. It was just a first crack at it. And I thought that's a signal to me that I should have them talk before I talk. Many of the best people in business and government either know this from experience or they know intuitively that they have to invite people to talk in a way that isn't suppressed by their own certainties.

Now if a leader is justifiably certain—they know this is what we should do—then certainty is fine. But for so many decisions, the leader needs to get a sense of what the range of options are, and what the downside is. So to be quiet is a really good idea.

JG: I think what's becoming more important is that more of our work is becoming creative and ambiguous in nature: for example, complementing machine learning algorithms that can do the rote stuff for us. There's just a lot more ambiguity out there. And there's a lot more need for this kind of like quiet leadership and intelligent teams.

CS: Completely. And what I think Clinton is talking about in the passage you gave, where there was something about leadership that's very important that he's signaling, is once a decision is made and it's going to go public, then it's good for the leader to be, to take Steve Jobs as an example, excited and confident and bold, because that's contagious.

JG: When I was reading your book, I was wondering whether Jobs was almost a counterexample to some of the things you were saying, because he had a strong idea of what he wanted.

CS: This is not an expert opinion on Steve Jobs. But I think what Jobs had was two things. First is a general vision of simplicity and elegance and usability and beauty. Jobs was, in my view, a kind of brilliant, intuitive, behavioral scientist who knew that if you make things complicated and nonintuitive, they may be useless. He knew to make things so that even kids could navigate. In a way, you could imagine an intellectual biography of Steve Jobs that would have as a title *Navigability*. No one would buy it, but it would be still a good title. So I think you're exactly right about Jobs, that aspect. He did have a vision.

JG: I never thought of him as being a proto-choice architect.

CS: I think (he was) completely a choice architect—a choice architect of a world historical caliber. My understanding is that accompanying that aspect of Jobs—you know, make it beautiful, make it simple, make it navigable—was a culture at Apple, basically at all stages, where creativity and innovation and invention and people's own ideas were, within the general context, really welcome.

There's a kind of analogy, I think, between Jobs and Franklin Delano Roosevelt, who as president had a vision of various things. He wanted the country to be out of Depression, and he wanted us to defeat Hitler.

But at the same time he wasn't someone who, with respect to the means of getting there, was a top-down dictator. On the contrary, he was trying to get the best out of his people.

And so Jobs, I think, was a unique figure. But I think he fits very well with the general thrust of our book. I think no one would accuse Jobs of being self-silencing. But he had the functional equivalent of that in the sense that he invited people to show their own forms of creativity. And if he got mad at them, it wasn't that they were not following his specific orders, but it was that they were just not doing something that the buying public would get excited about.

So there's a self-silencing and curious leader idea, which I think does fit many of America's best businesses.

There's another idea, which is about role assignments. And that's a great way of counteracting some of the groupthink-type problems. You say “your job is this”; “and your job is that”; and to the third person, “your job is something else.” You can eliminate the hidden profile problem, because everyone feels they have something to add, because they have a specific task, which it's their job to perfect.

I think Apple has been really excellent at that also. And if you look at other successful companies, one thing that the American automobile industry has succeeded in recently is that it's created a much better culture of innovation. It now asks what are your ideas; whereas, there was a period in the not-too distant past where they were frozen in their own equivalent of groupthink.

JG: One of the other ways you suggested for warding off group failure—and this is sort of a side note in your book, but I think it's important in other contexts—is “playing Moneyball”. You said that when the data are available, we should engage in what people are now calling business analytics, or colloquially, using big data to solve problems. It's about using statistical analysis and data to enable better judgments and decisions, as opposed to unaided intuition or anecdotes.

But another aspect of your book that intrigued me was that in many situations, we make bets on future scenarios when there just aren't a lot of data available. I'm

a data scientist myself, and I do a lot of predictive modeling at work. And in some situations I find that we just don't have that many historical cases that we can generalize from just using statistics and big data and data science.

So it struck me that some of the methods you talked about in the second part of the book—the Delphi Method, combining forecasts, prediction markets, and so on—they sort of pick up where the Moneyball stuff leaves off. I don't know whether you think that's a fair way of thinking about it.

CS: So I agree with you. I defer to you on the areas that you specialize in, so I'll be a little more general and say I completely agree. That's a very good way of describing maybe what the book could've been clear about.

In the federal government, the first-best, the gold standard, is if you have data. Say people are trying to figure out what to do about an air pollution problem. To have a bunch of people who are kind of smart get in the room and talk it through is less good than compiling terrific data. Now if you've got a group of people compiling the terrific data that's also helpful. What is the air pollution problem? How many people are getting sick? What are the consequences of trying to reduce the problem? To get really statistical and quantitative is the first-best. But if you don't have that, there are second-best tools which involve aggregating the opinions of experts who don't have statistical knowledge.

So if there's a forecasting problem where you don't have the data you need, or you have data which has murkiness in it, probably the best bet is not to go to the number-one person in the company or the world. Rather get the 20 or so best people in the company or the world—it could be a larger number—and ask them all what they think. And then take the median or average answer. It's probably the best you can do.

JG: There's so much focus on big data these days that people forget two things. One, they forget that sometimes the data won't have all the answers. And they also forget that even when you don't have a lot of data sometimes there's a lot of information out there residing in people's minds or opinions or judgments. And that's just being left on the table if you don't do things like prediction markets or combining forecasts.

CS: Right. So the mundane example is to figure out who's going to win elections. The two things you described are extremely good, prediction markets and combining forecasts. And it's remarkable that up until relatively recently, what 10, 15 years ago, we didn't have either of those things. People didn't know about them.

You'd ask who's the expert at the best newspaper and it turns out the experts at the best newspapers are really terrible compared to the poll, the aggregation of polls, or prediction markets which, usually, for elections, nail it.

And we don't have big data here. There's no data set. But at this point it can nail those things. Aggregations of polls and prediction markets tend to do great.

JG: Given that *Wiser* is a book about collective intelligence, it's appropriate that you end your book with a chapter on the nature of teamwork.

One thing you report is that individual measures of general intelligence like IQ matter—so teams composed of more intelligent people tend to perform better. But teamwork is important as well. The implication seems to be that personality attributes, not just hard skills and aptitudes, matter.

Along the way, though, you expressed a lot of skepticism about the Myers-Briggs Personality Assessment, and personality testing in general. Could you say a few words about that?

CS: Yes. So the Myers-Briggs Test is in use all over the United States. There's no evidence that it predicts anything of value. In fact the evidence isn't even good that it predicts anything. So it seems that the test is a waste of time and effort.

JG: Do you believe this about all personality tests or just Myers-Briggs in particular?

CS: I don't know. I wouldn't want to say that all of them are unhelpful for businesses; but that one that's in widespread use has yet to be validated. And there have been enough studies that we know it's not going to be. In principle it's possible that one will be validated but I'm not aware of any that works.

They may measure some characteristics of a person, but whether those are steady characteristics of the person across tasks and across context, is most unclear. So we know this about ourselves: that in one area we might be really timid, in another really bold. And so if on some tests it turns out we're timid or bold it's not going to be very predictive.

So we don't have anything that works so well. Of course, anything in principle could work so to keep looking for it would not be foolish. But we don't have it yet.

JG: There is an absolutely fascinating finding from Anita Woolley at Carnegie Mellon University and the MIT Collective Intelligence Team that a certain kind of group-level trait is measurable. I'm talking about Factor C. Can you talk about this mysterious Factor C and why it's important?

COLLECTIVE INTELLIGENCE AND THE READING THE MIND IN THE EYES TEST

Roughly a hundred years ago, the pioneering psychometrician Charles Spearman invented and applied a statistical technique called factor analysis to quantify what came to be known as general intelligence, or IQ (intelligence quotient). Spearman adopted the notation *g*—for general cognitive ability. Spearman’s *g* factor is a mathematical construct that quantifies an empirical regularity: People who are good at one sort of thing (say mathematical reasoning) tend to be good at other things as well (say verbal expression). Though not without controversy, this finding is one of the most replicated findings in psychology. The *g* factor has been found to be predictive of grades in school, success in certain jobs, and even life expectancy.¹

Much more recently, Anita Woolley of Carnegie Mellon University together with members of the MIT Center for Collective Intelligence, led by Thomas Malone, used Spearman’s factor analysis technique to quantify an analogous trait of *teams* of people. Woolley and her collaborators discovered that it is possible to construct a single factor that explains roughly the same proportion of group performance that Spearman’s *g* explains of individual performance. In homage to Spearman, they dubbed their measure *c*—for collective intelligence. It turns out that groups good at certain types of tasks (say brainstorming) are also good at other sorts of tasks (say negotiating limited resources).

What traits are characteristic of such “smart” (high Factor C) teams? Intuitively one might think that the presence of smart people might result in smart teams. And indeed this is the case—but only to a limited degree. There is a positive correlation between the average, or maximum, intelligence scores of group members (*g*) and the intelligence score of the group as a whole (*c*), but it is surprisingly small. Simply gathering “the best and the brightest” doesn’t necessarily give rise to a smart team.

What else? A finding that made the headlines is that all else equal, teams with more females tend to be smarter than teams with fewer females. Interestingly, this is not a “diversity” finding: Teams composed of mostly females tend to outperform those that are roughly half male and half female.

A second finding is that evenness of conversational turn-taking—not having a few team members dominating the conversation—is correlated with group intelligence. This data was gathered by Sandy Pentand’s sociometric badges (see “IoT’s about us,” in this issue of *Deloitte Review* for more details).

Finally, team members' average performance on a psychological test called *Reading the Mind in the Eyes* is correlated with their team's group intelligence. The test was developed by the prominent autism researcher Simon Baron-Cohen (brother of Sacha) and is here used as a measure of social perception. The test contains a battery of black and white close-ups of film actors' faces, cropped around the eyes, paired with multiple choice questions such as, "Is this person (a) curious (b) flirting (c) annoyed, ..." Interestingly, the significance of the other two findings (women on the team and conversational turn-taking) goes away when put into a single regression analysis along with the average *Reading the Mind in the Eyes* score. This suggests that the correlation of more women on the team with higher group intelligence might be explained by the fact that women tend to do better on tests of social perception than men.



You can try the test yourself at <http://socialintelligence.labinthewild.org/mite/>.

CS: The idea is that some groups have people who are good at social interaction. And one way of measuring that is through the aggregation of three things. And they're going to sound a little random.

One is how good people are at reading people's emotions. There's a test called the Reading the Mind in the Eyes test, originally a test for autism. If people can read emotions and eyes then they are likely to be better at helping their teams do well. That's number one.

Number two is: Is it a group where lots of people are participating or just one or two? Groups in which a lot of people are participating tend not only to have higher morale than they otherwise might, but to come up with better decisions. And that's connected with your point just a few minutes ago, that you may not have statistical information but people have lots of bits of information. So if you have a group where, say, eight people are talking, it's going to do better than a group of eight people where two or three people are talking.

And the third, kind of mysteriously, in the sense that we don't know exactly why, is that groups with women in them do better.

And if you aggregate—so are people good at reading emotions and faces or does the group have a lot of participants in conversation and does the group have women on it, then that—the aggregation of those three factors—thus far is better even than general intelligence as a way of predicting group performance.

JG: So the average general intelligence of the people in the group, or even the general intelligence of most intelligent person in the group, is not as important as this Factor C that Anita Woolley and her collaborators were able to measure.

CS: Yes.

JG: And there is a measure of group intelligence. It's more important for group success than the average intelligence of the members of the group.

CS: So that's a huge headline. If you're trying to compose a group, you do want really able people. But even more you may want people who are able to interact because they can read each other's emotions. They're all going to be participating. And at least some of them are female.

Now what we don't know on the female issue—where there's something about women's presence on the groups that makes the groups do better—is whether women tend on average to be better at reading people's emotions, whether that's kind of overlapping with the first factor.

JG: Yes. It almost made me wonder whether companies should start trying to measure social perception, perhaps using the Reading the Mind in the Eyes test, when making hiring and promotion decisions.

CS: Yes. I think, whether you want to administer the test literally or instead take into account what is observable in terms of how people interact with each other, that's a reasonable question.

But certainly you can have a sense, maybe sometimes even at the hiring stage whether people are good at reading one another's moods and such, or not. That, for many tasks, is a really important factor for companies, for mayors' offices, for nonprofits to keep in mind when they're figuring whom to hire.

It is important to ask, what is the relevant task? If there are tasks where people can actually perform them on their own, where they're just staring at their computer and whatever they produce goes into the hopper, then this would be less important. But if it's something where collective decision making is required then it's a good way of making the team work really well.

JG: Factor C intrigued me and it made me wonder whether it is the thin edge of the wedge. I wonder if there are other kinds of—I think James Heckman, your former colleague at the University of Chicago, calls them non-cognitive abilities—things other than general intelligence or hard skills that you can measure about people.

It made me wonder whether in other types of jobs—like computer coding or data analysis or technical writing—there are other skills analogous to Factor C. You know instead of really being able to be good at social perception maybe other non-cognitive abilities like, say, dedication or intellectual curiosity or persistence would be important. And maybe we should try to figure out how to measure such things. Speculative point.

CS: That's extremely interesting. And I'll bet you're right. And it shows that with respect to group decision making over the last, you know, 25 years we probably learned more than we did in the previous 100. There's so much more to know. **DR**

James Guszczka is the US chief data scientist for Deloitte Consulting LLP.

Endnotes

1. All findings in this sidebar are discussed in "Evidence for a collective intelligence factor in the performance of human groups" by Anita Williams Woolley, Christopher F. Chabris, Alex Pentland, Nada Hashmi, and Thomas Malone, *Science*, October 29, 2010.