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**DEFEND YOUR RESEARCH**

## What Makes a Team Smarter? More Women

*by Anita Woolley and Thomas Malone*

# Defend Your Research

HBR puts some surprising findings to the test

## What Makes a Team Smarter? More Women



**Anita Woolley** ([awoolley@cmu.edu](mailto:awoolley@cmu.edu)) is an assistant professor of organizational behavior and theory at Carnegie Mellon University.



**Thomas Malone** ([malone@mit.edu](mailto:malone@mit.edu)) is the Patrick J. McGovern Professor of Management at the MIT Sloan School of Management and the founding director of the MIT Center for Collective Intelligence.

**The finding:** There's little correlation between a group's collective intelligence and the IQs of its individual members. But if a group includes more women, its collective intelligence rises.

**The research:** Professors Woolley and Malone, along with Christopher Chabris, Sandy Pentland, and Nada Hashmi, gave subjects aged 18 to 60 standard intelligence tests and assigned them randomly to teams. Each team was asked to complete several tasks—including brainstorming, decision making, and visual puzzles—and to solve one complex problem. Teams were given intelligence scores based on their performance. Though the teams that had members with higher IQs didn't earn much higher scores, those that had more women did.

**The challenge:** Are brainy people overrated? Are women the true key to success? **Professors Woolley and Malone, defend your research.**

**Woolley:** We've replicated the findings twice now. Many of the factors you might think would be predictive of group performance were not. Things like group satisfaction, group cohesion, group motivation—none were correlated with collective intelligence. And, of course, individual intelligence wasn't highly correlated, either.

**Malone:** Before we did the research, we were afraid that collective intelligence would be just the average of all the individual IQs in a group. So we were surprised but intrigued to find that group intelligence had relatively little to do with individual intelligence.

**HBR: But gender does play a role?**

**Malone:** It's a preliminary finding—and not a conventional one. The standard argument is that diversity is good and you should have both men and women in a group. But so far, the data show, the more women, the better.

**Woolley:** We have early evidence that performance may flatten out at the extreme end—that there should be a little gender diversity rather than all women.

**You realize you're saying that groups of women are smarter than groups of men.**

**Woolley:** Yes. And you can tell I'm hesitating a little. It's not that I don't trust the data. I do. It's just that part of that finding can be

explained by differences in social sensitivity, which we found is also important to group performance. Many studies have shown that women tend to score higher on tests of social sensitivity than men do. So what is really important is to have people who are high in social sensitivity, whether they are men or women.

**So you didn't see a negative correlation with individual IQs—just a very weak positive correlation. In theory the 10 smartest people could still make a great group, right?**

**Woolley:** In theory, yes, the 10 smartest people could make the smartest group, but it wouldn't be just because they were the most intelligent individuals. What do you hear about great groups? Not that the members are all really smart but that they listen to each other. They share criticism constructively. They have open minds. They're not autocratic. And in our study we saw pretty clearly that groups that had smart people dominating the conversation were not very intelligent groups.

**Can teams be too group oriented?**

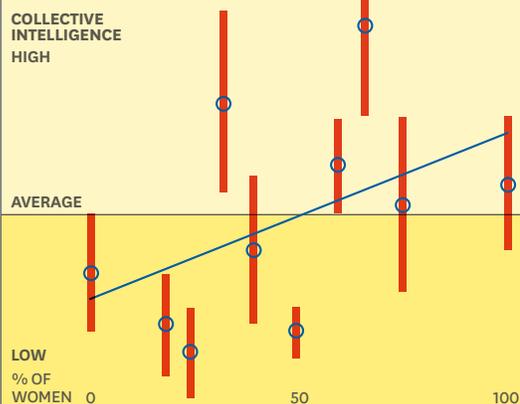
**Everyone is so socially sensitive that there's no leader?**

**Woolley:** Anecdotally, we know that groups can become too internally focused. Our ongoing research suggests that teams need a moderate level of cognitive diversity for effectiveness. Extremely homogeneous or extremely diverse groups aren't as intelligent.

**In some ways, your findings seem blindingly obvious: that teams are more than just a collection of the best talent.**

## The Female Factor

The chart plots the collective intelligence scores of the 192 teams in the study against the percentage of women those teams contained. The red bars indicate the range of scores in the group of teams at each level, and the blue circles, the average. Teams with more women tended to fall above the average; teams with more men tended to fall below it.



**Malone:** Sure. This is well-known in sports. Our study shows it with intellectual tasks. We realized that intelligence tests are a way to predict individuals' performance on a range of tasks, but no one had thought of using the same approach to predict group performance.

**Woolley:** There was a step change in psychology once the field had an empirical method of measuring individual intelligence through IQ tests. We're hopeful that this work can create a similar seismic shift in how we study groups.

**Many factors you might think would be predictive of group performance were not. Group intelligence had little to do with individual intelligence.**

**Can we design teams to perform better?**

**Malone:** We hope to look at that in the future. Though you can change an individual's intelligence only so much, we think it's completely possible to markedly change a group's intelligence. You could increase it by changing members or incentives for collaboration, for instance.

**Woolley:** There is some evidence to suggest that collective intelligence exists at the organizational level, too. Some companies

that do well at scanning the environment and setting targets also excel at managing internal operations and mentoring employees—and have better financial performance. Consistent performance across disparate areas of functioning suggests an organizational collective intelligence, which could be used to predict company performance.

**So this phenomenon could extend beyond the small groups you studied?**

**Malone:** Families, companies, and cities all have collective intelligence. But as face-to-face groups get bigger, they're less able to take advantage of their members. That suggests size could diminish group intelligence. But we suspect that technology may allow a group to get smarter as it goes from 10 people to 50 to 500 or even 5,000. Google's harvesting of knowledge, Wikipedia's high-quality product with almost no centralized control—these are just the beginning. What we're starting to ask is, How can you increase the collective intelligence of companies, or countries, or the whole world? ♥

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