

# AMERICAN Scientist

INTERVIEW

## An Interview with Cordelia Fine

Anna Lena Phillips

Psychologist and writer Cordelia Fine studies how our brains work and writes about the subject in clear and entertaining prose. Her first book, *A Mind of Its Own: How Your Brain Distorts and Deceives* (W. W. Norton and Co., 2006) was one of 12 books long-listed for the 2007 Royal Society Prize for Science Books. Her latest book, *Delusions of Gender: How Our Minds, Society, and Neurosexism Create Difference* (W. W. Norton and Co., 2010) critiques some neuroscientific research dealing with gender that is, Fine says, not only misleading but dangerous in its perpetuation of falsehoods and stereotypes. Other studies Fine discusses reveal how unconscious gender bias influences people's behavior. Some of the book's findings are downright discouraging, but Fine tempers these with sharp wit and a buoyant sense of humor. And her conclusions ultimately point to a hopeful future, in which both scientists and the public are better informed. The book, which will be out in paperback in August, was shortlisted for the 2010 John Llewellyn Rhys Prize and the 2011 Best Book of Ideas prize.

Fine is a senior research associate at the Centre for Agency, Values and Ethics at Macquarie University and at the Centre for Ethical Leadership at the Melbourne Business School, University of Melbourne. Anna Lena Phillips interviewed her by e-mail in April 2011.

**In *Delusions of Gender*, you make a detailed case that gender differences are primarily culturally created. What first convinced you to write about this subject?**

What first motivated me to write the book was an experience I had as a parent, rather than as an academic. I read a book which claimed that hardwired sex differences mean that boys and girls should be parented and taught differently. I found this really interesting—but when I looked at the actual studies being used as evidence, I was shocked by the extent to which the neuroscientific findings were being misrepresented. So my initial motivation was simply to alert people to the fact that old-fashioned stereotypes are being dressed up in neuroscientific finery, and to remind people not to be so enthralled with brain imaging that they forget the importance of social factors.

But when I started to look more closely at the scientific literature itself, I was surprised to discover just how little really concrete evidence there is for the idea that there's such a thing as a "male" brain hardwired to be good at understanding the world, and a "female" brain hardwired to understand people. Instead what I found was a great deal of evidence that our minds are exquisitely attuned to the social environment, and surprisingly sensitive to gender stereotypes. The problem then becomes that these very confident popular claims about "male" brains and "female" brains reinforce gender stereotypes in ways that have self-fulfilling effects on the way we think and behave. And so at that point my aim for the book became to explain this much more complex, and actually much more interesting, picture of the state of the science in a way that would be accessible to everyone. I hope it will help to dispel the belief, encouraged by many popular commentators, that science has shown that hardwired sex differences mean that it's pointless to hope or strive for greater sex equality.



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**I was fascinated by your descriptions of how culture can help to create and reinforce gender. Of all the studies that try to measure this, is there one that you find particularly compelling?**

Probably the work I found most intriguing, since it shows just how subtle the cultural transmission of gender can be, was Stacey Sinclair's research on "social tuning." She and her colleagues have found that we socially "tune" our self-perceptions to blend with the opinion of ourselves held by the person with whom we're interacting. For example, when women were led to believe that they were going to spend some time with someone charmingly sexist, they obligingly temporarily perceived themselves as more stereotypically feminine than a control group. And remarkably, when they actually interacted with the supposed benevolent sexist, they even behaved in a more stereotypically feminine way.

**The book has received a lot of critical acclaim. But one review, although it too offered praise for the book, claimed that you devote more time to less rigorous studies of gender differences in the brain than to better studies, and that there are more solid examples to mention that do show difference. What would you say to this?**

It's simply not the case that, as the review suggested, my book—while rightly wresting the maverick shoddy science to the floor—overlooks more solid research. Much of the research I critiqued was published in the most prestigious journals of science, has been cited heavily, and furnishes the very foundations of claims of essential differences. I certainly did not pick off only the weakest prey.

There are three important issues that apply to all research supposedly showing evidence of sex differences in biological predispositions. First, researchers often have an impoverished view of the social influences of which they must take account before coming to the conclusion that sex differences in "hardwiring" or "biological predispositions" explain behavioral differences. A second important issue is that methods really matter, yet researchers are often not careful enough about them. As a result, what from a distance seems like a solid scientific structure can be seen close up to be resting on a web of unsubstantiated assumptions. Third, when it comes to interpreting sex differences in the brain, there are numerous reasons for caution. The differences may be spurious—surprisingly few sex differences in the brain are uncontroversial. The differences may also be a result of brain size rather than of the individual's sex, since on average the male brain is larger than the female brain. And then, even if a sex difference turns out to be real and reliable, the fact of its existence does not tell us why it exists—could it be the product of experience?—or what impact, if any, it has for thinking, feeling and behavior.

**You talk in the book about a lot of studies that reveal unconscious gender bias. Was it difficult to confront all this evidence and to write about it?**

I think what made me most despondent was the growing realization that this is a book that has been written many times before, and will be written many times again. As long as there has been brain science there have been—in retrospect—misguided explanations and justifications of sex inequality: Women's skulls are the wrong shape, their brains are too small, their hemispheres are too unspecialized. Again and again, these hypotheses eventually find themselves hurled on the scientific scrap heap. But not before they become part of cultural lore and reinforce social attitudes about men and women in ways that hinder progress towards greater sex equality. And it's still happening—we don't seem to be learning from history. But at the same time, it was also encouraging to see how much society can change—for the better—in a relatively short period of time. Shortly after the book was published, Julia Gillard became Australia's first female prime minister. Less than a hundred years ago, the very idea of women voting—never mind being voted for—was to many a foolish and dangerous idea.

**What advice would you offer scientists, of any gender, who want to be more aware of issues surrounding gender bias and the scientific study of gender?**

I came to realize from researching and writing the book that, when it comes to this topic, we are afflicted with the problem of premature speculation. We are too quick to conclude that we have found the neural basis or biological origins of sex differences. There are lots of specific ways in which the quality of the science could be improved. But more generally, I think there is a perception that—such is the politically correct society in which we live—if anything, we are all very wary about suggesting that males and females are essentially different. Yet through researching the book I discovered that you can write whatever drivels you like about male and female brains and, if you're lucky, enjoy the pleasure of seeing it quoted uncritically in a reputable newspaper, becoming a bestseller, changing the educational strategies of a school, or being sold as a training tool to a large corporation. And this casualness is also, sometimes, in evidence within the scientific research: tiny sample sizes, poor methodologies, untested assumptions and precipitous conclusions. I certainly don't say that these problems are ubiquitous. There is plenty of good, careful and cautious work too. But casualness is tolerated. And so, beyond the specifics of how research is done, I think scientists could usefully become aware that unexamined assumptions about gender do still influence the way that research is conducted and interpreted, and that the idea of a politically correct social climate is a mischaracterization.

**What should interested readers turn to after *Delusions of Gender*?**

I would strongly recommend Rebecca Jordan-Young's recent book *Brain Storm: The Flaws in Sex Differences Research*.

**What's your next project?**

Conceptually, I'm interested in looking concretely at how the quality of the neuroscientific investigation of sex differences can be improved, and at the ethical responsibilities of scientists who work in this area. Empirically, I'm starting to look at how beliefs or information about essential differences between the sexes might influence workplace judgments and behavior, as part of the Gender Equality Project at the Melbourne Business School.

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