

## Will Working Mothers' Brains Explode? The Popular New Genre of Neurosexism

Cordelia Fine

Received: 19 December 2007 / Accepted: 27 December 2007 / Published online: 7 February 2008  
© Springer Science + Business Media B.V. 2007

**Abstract** A number of recent popular books about gender differences have drawn on the neuroscientific literature to support the claim that certain psychological differences between the sexes are 'hard-wired'. This article highlights some of the ethical implications that arise from both factual and conceptual errors propagated by such books.

**Keywords** Gender difference · Neuroscience · Popular science

Meet Sarah.

Sarah can "identify and anticipate what [her husband] is feeling—often before he is conscious of it himself." ([4], p. 118). Like the magician who knows that you'll pick the seven of diamonds before it's even left the pack, Sarah can amaze her husband at whim, thanks to her lucky knack of knowing what he's feeling before he even feels it. (*Ta-DA! Is this your emotion?*) Sarah is neither a fairground psychic nor the somewhat irresponsible owner of a futuristic brain wave interpreting machine. She is simply a woman who enjoys the miraculous gift of mind-

reading that, apparently, is bestowed on all owners of a female brain:

'Maneuvering like an F-15, Sarah's female brain is a high performance emotion machine—geared to tracking, moment by moment, the non-verbal signals of the innermost feelings of others.' ([4], p.119)

Sarah is just one of the many curious characters who populate lay science books about gender. She can be found in Louann Brizendine's book *The Female Brain*, one of several recent popular and influential books arguing for fundamental and 'hard-wired' differences in male and female psychology.

Unfortunately, scientific accuracy and common-sense are often casualties in the ugly rush to cloak old-fashioned sexism in the respectable and authoritative language of neuroscience [10, 19]. Mark Liberman, whose online Language Log offers wry and meticulous critiques of pseudoscientific claims about gender differences, has described some popular authors' use of the neuroscientific literature as "shockingly careless, tendentious and even dishonest. Their over-interpretation and misinterpretation of scientific research is so extreme that it becomes a form of fabrication." [18].

Then, too, with the buzz-phrase 'hard-wiring' comes an extraordinary insistence on locating social pressures in the brain. In *The Female Brain*, for example, the working mother learns that she is struggling against

---

C. Fine (✉)  
Centre for Applied Philosophy & Public Ethics,  
School of Philosophy, University of Melbourne,  
Melbourne, Victoria 3010, Australia  
e-mail: cfine@unimelb.edu.au

“the natural wiring of our female brains and biological reality” (p. 161). According to Brizendine, combining motherhood with career gives rise to a neurological “tug-of-war because of overloaded brain circuits” (p. 160). Career circuits and maternal circuits battle it out, leading to “increased stress, increased anxiety, and reduced brainpower for the mother’s work and her children.” (p. 112). But Brizendine promises her female readers that “understanding our innate biology empowers us to better plan our future.” (p. 159). It may startle some readers to learn that family friendly workplace policies are not the solution to reduced maternal stress and anxiety, and that fathers who do the kindergarten pick-ups, pack the lunch-boxes, stay home when the kids are sick, get up in the night when the baby wakes up, and buy the birthday presents and ring the paediatrician in their lunch hour are not the obvious solution to enhanced maternal ‘brainpower’. No, it is an appreciation of female brain wiring that will see the working mother through the hard times. (Predictably, Brizendine never even hints that the over-wired working mother consider the simplest antidote to the ill-effects of going against her ‘natural wiring’: namely, giving her partner a giant kick up the neurological backside.)

What accounts for the success and appeal of the new field of neurosexism? Most lay readers, of course, have neither the background nor the resources to question the many inaccurate and misleading claims made about gender differences in the brain. There is also recent evidence that neuroscientific explanations enjoy a special “seductive allure” [20]. People’s capacity to spot the unsatisfactory nature of circular psychological explanations is significantly reduced when impressive-sounding neuroscientific terms are introduced.

Yet surely there is more to it than this? The back cover of *The Female Brain* offers to explain why “a man can’t seem to spot an emotion unless someone cries or threatens bodily harm”. Were we to pick up a different sort of book that made an equally unusual sort of claim (a guide to pets, say, which promised to explain why cats can’t climb trees), we would immediately put it down and go in search of a more reliable text. Yet *The Female Brain* is a *New York Times* bestseller, translated into twenty-one languages and featured in newspapers, magazines and TV shows around the world. What, exactly, is the draw of gender stereotypes dressed up as neuroscience? For men, perpetuation of the idea that they lack women’s hard-

wired empathizing skills is a small price to pay for licence to lay claim to more valued and potentially profitable psychological advantages. According to another popular book about gender difference, *The Essential Difference* [1], “[t]he female brain is predominantly hard-wired for empathy. The male brain is predominantly hard-wired for understanding and building systems.” (p.1). As Levy [16] notes, this translates to the idea that “on average, women’s intelligence is best employed in putting people at their ease, while the men get on with understanding the world and building and repairing the things we need in it.” (pp. 319–320). Levy adds, “[t]his is no basis for equality. It is not an accident that there is no Nobel Prize for making people feel included.” (p. 323).

For women, a possible explanation of the appeal of neurosexism lies in the palliative system justification motive, “whereby people justify and rationalise the way things are, so that existing social arrangements are perceived as fair and legitimate, perhaps even natural and inevitable.” ([11], p. 119). Jost and colleagues have found that lower status groups have a remarkable capacity to rationalize what goes against their self-interests, internalize limiting stereotypes, and find legitimacy in the very inequalities that hold them back (see, for example [12]; [11]). If a frazzled mother can tell herself that her hard-wired powers of female empathy uniquely position her to intuit that the red-faced, cross-patch baby wants to get down from the highchair, then there’s no need to feel cross that she’s the only one who ever seems to notice. If she can take seriously Brizendine’s claim that it is only when the children leave home that “the mommy brain circuits are finally free to be applied to new ambitions, new thoughts, new ideas” ([4], p. 143) she may feel less resentful that the autonomy to pursue a career unhindered, a freedom still taken for granted by her partner, is now no longer extended to her.

Similarly, Davis [9] has recently suggested that gender role attitudes may fall in line with life, rather than vice versa. Davis’ recent longitudinal study of gender ideology found that young adults shed their gender egalitarian beliefs once they had children, but only so long as their procreation was normatively timed, indicating that it is not the experience of having children *per se* that causes gender ideology to change [9]. Rather, there may be something special about taking on a culturally loaded adult role. Davis asks whether it is, “because there are few structures in

place to support egalitarian marriages and child-rearing practices that individuals fall away from egalitarian practices and, as a reflection of their new interests, alter their belief structure to reduce cognitive dissonance?" ([9]; p. 1037). And as Cameron [5] has noted in her popular critique *The myth of Mars and Venus*, the effect, and also perhaps the appeal, of the idea of "timeless, natural, and inevitable" differences between the sexes is that it "stops us thinking about what social arrangements might work better than our present ones in a society that can no longer be run on the old assumptions about what men and women do." (p. 177). Popular neurosexism permits us to sit back and relax, with its seemingly neat explanation of our social structure and personal lives. The answer, 'Oh, it's the *brain*,' offers a tidy justification for accepting the status quo with clear conscience.

We can currently only speculate on the enervating effect of popular gender science books on male nappy-changing frequencies, or female patterns of leaving the toilet to be cleaned by someone else. However, there is evidence that accounts of gender that emphasise biological factors leave us more inclined to agree with gender stereotypes, to self-stereotype ourselves, and for our performance to fall in line with those stereotypes (e.g., [2, 7, 8]). Moreover, other research from the social psychological literature has shown that presenting cognitive or emotional tasks in ways that make them seem diagnostic of gender tends to set up a self-fulfilling prophecy (e.g., [3, 14, 15, 21–24]). Research such as this underlines the point that,

*'the psyche is ... not a discrete entity packed in the brain. Rather, it is a structure of psychological processes that are shaped by and thus closely attuned to the culture that surrounds them ... the mind cannot be understood without reference to the sociocultural environment to which it is adapted and attuned.'* ([13], p. xiii).

This important observation is one usually ignored by popular accounts of gendered 'hard-wiring'.

Mark Liberman has suggested that "misleading appeals to the authority of 'brain research' have become the modern equivalent of out-of-context scriptural fragments." [18]. Noting, along with Rivers and Barnett [19], that baseless neuroscientific 'facts' about gender differences are already having an impact on educational policies, for example, he argues that

journalists have a real responsibility to fact-check the accuracy of neuroscientific claims. The need for journalists to take on this responsibility takes on an extra import when one considers our susceptibility to poor neuroscientific explanations, together with the way that biological accounts of gender, and the stereotypes about male *versus* female abilities that they promote, can measurably alter our beliefs, self-identity and abilities.

Finally, of course, let's not forget the sheer embarrassment factor. The successful nineteenth century book, *Sex in Education* (subtitled *Or, A Fair Chance for Girls* – somewhat ironically as it turned out) argued that education was selectively perilous to girls and young women. Its author, Harvard Medical School professor Edward Clarke [6], proposed that intellectual labour sent energy rushing dangerously from ovaries to brain, threatening infertility as well as other severe medical ills. From our modern vantage point we can laugh at the crudely obvious prejudice that gave rise to this hypothesis (as biologist Richard Lewontin [17], p. 208 dryly remarked of this hypothesis, 'Testicles, apparently, had their own sources of energy').

Yet it seems we may have little cause for complacency. Who wants future generations to giggle in astonished outrage at our crude attempts to locate social pressures in the brain? (*Here it is, Michael! I finally found the elusive human 'maternal circuit'. See how it crowds out these circuits for career, ambition and original thought?*). Nineteenth century medical opinion proposed that girls who overtax their brains might never reproduce. Twenty-first century neurosexism warns that women who reproduce risk overtaxing their brains. It is, perhaps, a little less progress than many working mothers would have hoped for.

## References

1. Baron-Cohen, Simon. 2003. *The essential difference: Men, women and the extreme male brain*. London: Allen Lane.
2. Brescoll, Victoria, and Marianne LaFrance. 2004. The correlates and consequences of newspaper reports of research on sex differences. *Psychological Science* 15: 515–520.
3. Bonnot, Virginie, and Jean-Claude Croizet. 2007. Stereotype internalization and women's math performance: the role of interference in working memory. *Journal of Experimental Social Psychology* 43: 857–866.
4. Brizendine, Louann. 2007. *The female brain*. London: Bantam Press.

5. Cameron, Deborah. 2007. *The myth of Mars and Venus: Do men and women really speak different languages?* Oxford: Oxford University Press.
6. Clarke, Edward H. 1873/2006. *Sex in Education: Or, a fair chance for girls.* Boston: James R. Osgood & Company. Ebook retrieved from The Project Gutenberg.
7. Coleman, Jill M., and Hong, Ying-Yi. 2008. Beyond nature and nurture: the influence of lay gender theories on self-stereotyping. *Self and Identity* 7:34–53.
8. Dar-Nimrod, Ilan, and Steven J. Heine. 2006. Exposure to scientific theories affects women's math performance. *Science* 314: 435.
9. Davis, Shannon N. 2007. Gender ideology construction from adolescence to young adulthood. *Social Science Research* 36: 1021–1041.
10. Fine, Cordelia. 'Boys set adrift by dud science.' *The Australian*, 25 July 2007.
11. Jost, John T., and Orsolya Hunyady. 2002. The psychology of system justification and the palliative function of ideology. *European Review of Social Psychology* 13: 111–153.
12. Jost, John T., Mahzarin R. Banaji and Brian A. Nosek. 2004. A decade of system justification theory: accumulated evidence of conscious and unconscious bolstering of the status quo. *Political Psychology* 25: 881–919.
13. Kitayama, Shinobu and Dov Cohen. 2007. *Preface to Handbook of Cultural Psychology.* New York, London: The Guilford Press.
14. Koenig, Anne, M., and Alice H. Eagly. 2005. Stereotype threat in men on a test of social sensitivity. *Sex Roles* 52: 489–496.
15. Klein, Kristi J.K., and Sara D. Hodges. 2001. Gender differences, motivation, and empathic accuracy: when it pays to understand. *Personality and Social Psychology Bulletin* 27: 720–730.
16. Levy, Neil. 2004. Understanding blindness [book review]. *Phenomenology and the Cognitive Sciences* 3: 315–324.
17. Lewontin, Richard. 2000. *It ain't necessarily so: The dream of the human genome and other illusions.* New York: New York Review of Books.
18. Liberman, Mark. No date. Blinding us with science. <http://itre.cis.upenn.edu/~myl/languagelog/archives/004618.html>. Accessed on 12 September 2007.
19. Rivers, Caryl, and Barnett, Rosalind. 'The difference myth. *The Boston Globe*, 28 October 2007.
20. Skolnick Weisberg, Deena, Frank C. Keil, Joshua Goodstein, Elizabeth Rawson, and Jeremy R. Gray. (2008). The seductive allure of neuroscience explanations. *Journal of Cognitive Neuroscience* (in press).
21. Spencer, Steven J., Claude M. Steele, and Diane M. Quinn. 1999. Stereotype threat and women's math performance. *Journal of Experimental Social Psychology* 35: 4–28.
22. Vick, S. Brooke, Mark D. Seery, Jim Blascovich, and Max Weisbuch. In press. The effect of gender stereotype activation on challenge and threat motivational states. *Journal of Experimental Social Psychology*. DOI 10.1016/j.jesp.2007.02.007.
23. Walton, Gregory M., and Geoffrey L. Cohen. 2003. Stereotype lift. *Journal of Experimental Social Psychology* 39: 456–467.
24. Wraga, Maryjane, Molly Helt, Emily Jacobs, and Kerry Sullivan. 2007. Neural basis of stereotype-induced shifts in women's mental rotation performance. *Social Cognitive and Affective Neuroscience* 2: 12–19.