

Splitting the sexes

Virginia Valian ponders a study on biology, evolution and gender differences in humans.

Depending on where you buy it, this book's title is either *Why Can't a Woman Be More Like a Man?* (United Kingdom), or *Why Can't a Man Be More Like a Woman?* (United States). In my view, both titles suggest the retort: each can be.

Lewis Wolpert, a developmental biologist, surveys evidence for historical, neural, hormonal, emotional, cognitive, linguistic and health differences and similarities between men and women in an attempt to shed light on their consequences. That is a lot of ground to cover in 224 pages — a bit like The Reduced Shakespeare Company's 80-minute *The Complete Works of William Shakespeare (Abridged)*. In the 22-page chapter on sex and reproduction, for instance, Wolpert reviews sexual activity and arousal, choice of sexual partners, cross-cultural differences in mating, sexual orientation and transsexuality. The ten-page chapter on sex discrimination takes us from Herodotus to women's under-representation in maths and science. Nuance is inevitably lost, as is an organizing principle.

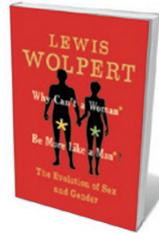
One can learn a lot from Wolpert about biological sex differences, but the book never overcomes one difficulty. The very data that Wolpert presents — such as the minimal differences between men and women in skills, cognition and language — undermine his thesis that brain and hormonal differences are major contributors to disparities in professional success.

Wolpert notes, for instance, that few of the purported differences between male and female brains, such as the extent of grey and white matter, seem linked to differences in male and female behaviour. Despite such statements, and a heavy use of conditionals such as 'may' and 'might', Wolpert still expresses views that are at best over simplified and at worst cartoonish. For example, he repeats the observation that "people everywhere understand sex as 'something females have that males want'".

In his chapter on skills, Wolpert notes that one of the few robust sex differences in cognition is the superior ability of males, on average, to mentally rotate three-dimensional (3D) images. This is linked to hormones. But behavioural effects of hormonal differences are not straightforward, despite thorough documentation of male and female hormones and investigations of children with congenital adrenal hyperplasia who have been exposed to atypically high

amounts of testosterone in the womb. In girls, one consequence is a superior ability to rotate 3D images, but boys show reduced ability. Although that supports the likelihood that spatial differences in unaffected males and females are mediated by hormones, they are not dictated by them — training can eliminate the difference.

To clarify the paucity of cognitive differences, Wolpert introduces a helpful perspective from the developmental psychologist Uta Frith: equivalent behaviours need not require the same neural mechanism. (Adding and subtracting, after all, can be accomplished by calculators with different mechanisms.) In a similar vein, neuroendocrinologist Geert De Vries and others have conjectured that neural and hormonal sex differences can interact to eliminate or



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create behavioural differences. There is a fascinating question here about the relation between brain, hormones and behaviour, which would have produced a richer book had Wolpert pursued it.

With respect to women's maths abilities and under-representation in science, Wolpert offers a grab-bag of facts with little interpretation. He also fails to consider the implications of the social and political factors inherent in transnational differences, such as China having a much higher percentage of women in engineering than the United States. Instead, and despite mixed evidence, Wolpert proposes that empathy "marks a fundamental difference" between the sexes and suggests that as a reason for men's dominance in science.

Empathy, however, is a complex state involving both cognitive components such as the ability to recognize others' emotional states, and emotional components such as the ability to share the emotions involved in those states. Women report greater feelings of empathy than men do, but that may reveal little, because both sexes know that women are expected to be more empathetic. In well-controlled studies, sex differences are sparse. Some research finds, for example, that whereas men and women self-report differently, both show equivalent increases in pupil dilation when viewing images of people being hurt deliberately as opposed to unintentionally.

In his conclusion, Wolpert tries to account for "the almost universal subjection of women by men", speculating that along with factors such as size differences, pregnancy and breastfeeding, "empathy possibly makes women more willing to do what men request". Although it is qualified, that last statement comes uncomfortably close to painting women as the unprotesting victims of selfish men. By seeing sex differences in empathy as close to immutable, Wolpert relegates women to suboptimal professional lives and men to suboptimal parenting. What keeps the sexes from being more alike has more to do with social structure and beliefs about gender differences than with bare biology. ■

Virginia Valian is a distinguished professor at Hunter College in New York City and the City University of New York Graduate Center. e-mail: virginia.valian@hunter.cuny.edu

