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Book Review

A Roadmap of the Male Brain

A review of Louann Brizendine, *The Male Brain*. Broadway Books: New York, 2010, 271 pp., US\$24.99, ISBN 978-0767927536 (hardcover).

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Author of *The Male Brain* Dr. Louann Brizendine holds the Lynne and Marc Benioff Endowed Chair in Psychiatry and is a neuropsychiatrist of the University of California, San Francisco (UCSF). She is also the Director of the UCSF Women's Mood and Hormone Clinic, which she founded in 1994. These positions allow her access to both academic research and clinical practice experiences, making her a practitioner expert in the hormonal effects on both the male and female brain.

The title of the introduction (*What Makes a Man*) outlines what this book is: a roadmap for women (and even men) who are interested in knowing what goes on in the brains of men when they behave the way they do. The book focuses on the interaction between a man's brain structure and the social forces experienced through his life stages, emphasizing that behavioral tendencies are not cast in plaster as far as the male brain is concerned. Rather, there is a feedback loop between expectations and goal fulfillment that is processed by the brain which, in turn, shapes the brain structure, resulting in the uniquely male brain. Following her *New York Times* bestseller *The Female Brain*, this is Brizendine's second book and it is as fun to read as it is informative.

Dispelling the popular misconception of a simplistic male brain, Brizendine shows otherwise with a host of scientific findings. The bulk of the book follows a developmental timeline. Beginning with infancy and boyhood (Chapter 1) where behavioral differences between boys and girls are explained hormonally, Brizendine shifts to the puberty stage of boys and chronicles the effect of testosterone influx on male teenagers (Chapter 2). The stage of sexual maturity follows, along with the pursuit of mates and sex (Chapters 3-4). A chapter on fatherhood (Chapter 5) follows, where Brizendine tells the story of a new father and his journey to bond with his son as well as the role of the mother in a successful father-child bond. The author subsequently touches on the emotions experienced by men and the reactions that arise due to these emotions, focusing on midlife and marriage (Chapter 6). To end the book, she closes with a chapter on the mature male brain on two areas: the development of an ideal man for women and onset of the andropause stage (Chapter 7). As a final touch in the appendix, Brizendine briefly talks about the male sexual orientation and

how it can be partly explained by genetics. Through her vivacious writing style, Brizendine weaves together a mesh of scientific knowledge and personal anecdotes throughout the chapters of her book, pointing readers to hormonal events happening at each twist and turn of male behavior. For example, an excerpt regarding infant care:

As it turns out, the tending instinct is prewired into all human brains, not just mothers'. If we could have taken a brain-scan camera inside Tim's head as he cared for Blake, we'd have seen his amygdala, his worrywart ACC (Anterior Cingulate Cortex), and his insula – the area for gut feelings – light up as heard Blake crying. Then, as Tim playfully changed Blake's diaper and kissed his soft stomach, the gleeful smile on his son's face would trigger his brain's reward center, the NAc, or nucleus accumbens. At this moment, all the circuits of Tim's daddy brain would be pulsing with the joy of fatherhood (p. 83-84).

The Male Brain has been styled and structured by Brizendine into a book that is able to explain underlying neurological and neurohormonal events occurring at various significant stages of a boy/man's life: development of social hierarchy awareness (p. 42) and its importance in adulthood (p. 108), onset of testosterone and its effect on teen boys' perception and concentration level (p. 32), rebelliousness of teen boys to gain independence from parents (p. 46), development of sexual desire, mating strategies (p. 59) and sexual performance (p. 69), parenthood and child bonding (p. 80), marital problems with wives (p. 95), andropause (p. 120) and grandfatherhood (p. 128).

Alongside an abundance of scientific findings, readers will find practical advice on parenting boys and relating to men (marriage counseling) as Brizendine draws from guidance given to her clients. As an example to illustrate the difference between men and women's reaction to problems, Brizendine recounts how she comforted a lady who was distraught at her husband's seemingly 'unemotional' reaction to her complaints about her work problems (p. 95). Instead of comforting her, he "goes into robot mode and starts telling me (her) what I (she) should do." However, it wasn't that her husband did not understand her anguish. His brain circuits were accustomed to simply finding solutions to solve the problem instead of focusing on the bad emotions as women would usually do. He loved his wife, but his brain was wired to offer solutions as an expression of that emotion. "Once it (the brain) identifies with an emotion, it quickly taps into the TPJ (temporal-parietal junction system) to complete the cognitive emotional processing (p. 98)."

While catering to the mass population, Brizendine does not forget her academic readers. She packs her book with extensive academic references and notes, which take up nearly half of the book's volume. The references should be quite useful for anyone interested in further researching specific areas. Evolutionary scientists may take interest in the various adaptive mechanisms that Brizendine discusses. In particular, the author does a great job illuminating the hormonal responses that are directly responsible for generating specific emotional and behavioral reactions to different situations. For example, she talks about how every voice and facial expression is processed differently post- versus prepuberty. In particular, during puberty, teenage boys develop a super-sensitivity to potential

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threats. The presence of testosterone and vasopressin changes their perception of the environment, allowing teen boys to make quick decisions on whether to fight or run. The development of this adaptive mechanism contributes to teenage boys being sullen and antsy, until they are able to control these impulses. As this example suggests, a particular strength of this book is that it points to well-needed links between theorized evolutionary mechanisms and actual biological processes.

Brizendine emphasizes heavily on biological factors in explaining men's behavior: "Understanding the biology of the male brain helps us relate better to the male reality. Much of the conflict that exists between men and women is fueled by unrealistic expectations that stem from failing to grasp each other's innate differences" (p. 131). However, she acknowledges that environments play a significant role: "But soon social pressures, child-rearing practices, and biology begin reshaping the male brain circuits" (p. 132). In fact, research indicates that genetic influence on sexual orientation holds only about 35% (p. 135). It is Brizendine's belief that knowledge about the male brain and its effects on men will lead to "a genuine balance between the sexes" (p. 132).

If you are (as I am) lacking a background in neuropsychiatry and worry that technical terms will hinder your understanding of the book or that the author will spend an entire paragraph explaining the function of a hormone, fret not. Brizendine does a great job introducing the academic vocabulary needed to understand her arguments. Her ability to explain technical terms in layman words is quickly apparent in first few pages of the book, where she introduces the different hormones existing in a male brain *a la* characters of a story. Imagine cortisol introduced as The Gladiator and androstenedione as Romeo.

Overall, the progressive timeline allows easy reference to the relevant sections while providing a clear presentation of the overall developmental picture of biological mechanisms that are present in a normal man. Dr. Louann Brizendine has done a fantastic job in clarifying one of the greatest mysteries of the female population. This book also serves an important function of showing the non-academic population evolutionary science without overly confusing scientific jargon. It reaches out to people who would otherwise not read about the latest scientific findings and remain trapped in their erroneous assumptions about a simplistic male brain. I strongly recommend *The Male Brain* to anyone trying to understand the man/boy in their lives or in their journal articles.