Review: Gender on the brain / Review of 'BrainSex: The Real Difference between Men and Women' by Anne Moir and David Jessel

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Michael Joseph, pp 228, Pounds sterling 12.95 Lynda Birke

N THE 1870s one Alabama doctor claimed: 'Beware! Science pronounces that the woman who studies is lost,' in response to feminist agitation for higher education. So, too, science can provide the antidote to more recent demands for women's emancipation; if male dominance is all nature's fault, then patriarchy is inevitable and feminists misguided.

BrainSex is in this genre. Like its predecessors, it asserts that science has clearly shown differences in the way that men's and women's brains function; these, moreover, determine differences in behaviour and intellectual ability. If we remain unaware of this all-encompassing dictate of our biology, then that is due to the power of prevailing beliefs in 'cultural conditioning'. The sexes are not the same; to believe otherwise is to 'build a society based on a biological and scientific lie'.

Anne Moir and David Jessel claim that men's and women's brains are 'wired' differently as a result of exposure to different levels of sex hormones before birth. This wiring ensures that their brains work along different lines from the moment they are born; so, for example, girls acquire verbal skills more quickly, and boys develop greater spatial ability. The result, Moir and Jessel suggest, is that boys excel in maths and science, while girls are more concerned with communicating with other people.

As adults, male brains ensure that their owners single-mindedly pursue careers. 'It is men,' say Moir and Jessel, 'who feel driven to discover the secret clockwork of Creation itself, the laws of physics, motion (or) gravity.' The drive stems from greater amounts of testosterone, the 'aggression and dominance hormone'. Hormones, meanwhile, induce females to become maternal; and they ensure that women are naturally 'fastidious' and so more suited to domestic work, like stacking the dishwasher.

Hyperbole is an obvious risk of popular accounts of science. Thus, 'virtually every' neuroscientist believes that fetal brains are 'awash' with hormones, exerting a powerful 'prenatal mind control'. 'Literally hundreds of studies' show sex differences in spatial ability. The rising 'hormonal sap of puberty' helps to continue the differences into adulthood.

That is heady stuff. Science as incontrovertible truth is a powerful idea, and one often invoked in response to woolly sociological notions that we might work to change society. But what has science had to say about brains and sex? Prenatal hormones do seem to influence how some parts of the brain develop. One small area of the hypothalamus, for example, appears to be larger and to have more connections between nerve cells in male mammals than in females. But this is not too surprising: one job the hypothalamus does is to organize the body's production of sex hormones. In females, this is cyclic, while in males it is not. Unambiguous evidence of structural differences in the rest of the brain, however, is scant.

Researchers have not suppressed the evidence that does exist: on the contrary, the discovery of differences in the hypothalamus received extensive media coverage at the time. But one reason why it has not received more accolades is that many scientists are more cautious in extrapolating from cells to human society.

Not only are some scientists more cautious; several have also pointed to the methodological difficulties that inevitably beset studies of human development. It is rarely possible to control variables, such as the behaviour of parents towards children, for example. And if some - not 'literally hundreds' - studies show that males tend to outscore females on tests of spatial ability, how can we unravel the many cultural influences at work? Meccano sets have a lot to answer for.
The cause of scientific truth is not helped by reducing the complexities of human development to chemical cocktails. Hyperbole allows that cause to slip even further away. Congenital adrenal hyperplasia (CAH), for instance, is a condition in which the adrenal glands, situated adjacent to the kidneys, secrete excessive levels of particular hormones during early development. But even popular accounts of science should not refer to CAH as an abnormality of 'the kidneys'. Nor do 'we know how to make homosexual rats and monkeys'; what 'we' can do with hormones, rather, is to alter the frequency of certain patterns of behaviour, such as mounting. That does not create a homosexual, be it rat or anything else.

Explanations of sex differences that uphold the status quo are familiar enough. The bias towards accounting for only some observed differences, such as male predominance in science, is familiar, too. I doubt if dressmaking, for example, could be accomplished without spatial skills, yet that is stereotypically the preserve of women.

What is less familiar is the alleged extreme environmentalism against which Moir and Jessel argue. Few indeed are the liberals, feminists or woolly sociologists who would attribute all gender divisions solely to 'cultural conditioning' onto the 'blank slate' of infancy. Among the other factors they might consider are social class and power. Loss of money, suggest Moir and Jessel, presents a terrible threat to the (hormonally based) masculine self: stockbrokers might even jump out of Wall Street skyscrapers. And so, of course, might a woman living below the poverty line, struggling to raise a family on what is left of child benefit. She may not even know how to stack a dishwasher.

We should, Moir and Jessel urge, abandon the pursuit of equal opportunities; rather, we should celebrate difference. I must admit that I was not aware that feminists, liberals and so forth had even denied difference: what they have said, rather, is that difference should have nothing to do with equality and human rights.

'Liberal' educators would agree with one claim, that tailoring science teaching to girls' experience and needs is desirable. But I doubt if they would agree with many of the other suggestions. Affirmative action, for example, they imply will mean inefficiency, with less competent women in positions of responsibility. 'Would you,' they ask, 'let your children fly on an affirmative action airline?'

I must confess that I did not try the quiz: 'What sex is your brain?' As a woman scientist who hates housework, I think I can guess the result.

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**Quiz (What Sex is Your Brain?)**