

# Do Gender Differences Exist, and Do They Matter?

## The science, and the subtlety, of raising kids to be equal

For most readers, the idea of biological gender differences is not problematic. They take a middle view – that gender is a factor, but not a deciding factor – in who our kids are and how to raise them well.

Occasionally though, someone takes issue with the very idea of treating the genders differently. (Or having books addressing one gender or the other.) For the most part, I would agree: children are children, and much of parenting is the same regardless of a child's sex.

But should we always treat kids the same, regardless of whether they are a boy or girl? There was a widespread movement from the 1970s onwards to reduce differences in childrearing so that kids could be free to be themselves. Readers of my books will know that they actively support this. Boys doing cooking and housework, for example, is one of the key messages of *Raising Boys*; girls being loud, messy, wild and strong is a notable theme of *Ten Things Girls Need Most*. I am arguably the world's leading advocate for fathers playing an equal role in childrearing.

But my books also say something else – that *it's not enough* to treat kids the same. We also have to work specifically to address the risk factors of being a boy or girl that in the twenty-first century are still very much in evidence. Boys are nine times more likely to go to jail, far more likely to rape, commit suicide or die in a car crash. And increasingly less likely to go to university. Girls are far more likely to self-harm, to suffer from depression, and so on.

Even if you subscribe to the idea that there is no innate gender continuum along which all kids are biologically located (i.e. you believe that that it's all down to conditioning), this point still holds. Most kids today are still very gendered (even though some are finding a place between those extremes). So we have to address that, especially when it's limiting, or harmful to their lives or those around them. The big question is how. Gender-blind childrearing was one attempt, and in childcare centres, schools and enlightened homes, this began in earnest forty years ago and continues to this day.

By the 1990s though, it was clear that this project was not progressing as it should, especially with improving boys' and men's behaviour and their ability to relate well to women and girls. Arguably, things were getting worse. And then in the 2000s we began to see a serious decline in the mental health of girls. This too was gender-specific and needed unique answers. And, quietly in the background, all through those decades, we

learned more and more about gender on a cellular, biochemical and structural level, which pointed to the whole question being far more complex than originally thought.

Let's give an example. One of the most persistent and important differences between boys and girls is in their ability to read. Boys are three times more likely to struggle with reading, and overall are worse readers throughout their school lives. This has long been a problem, and very recent research shows that it is not going away.<sup>1</sup> Even in the most advanced education systems such as those of Finland and Scandinavia, girls remain better readers than boys. And as cited earlier, brain differences seem to be at the heart of this. Boys vary hugely in how masculinised they are, even in the womb. The higher a boy's testosterone levels *in utero* (as measured in umbilical cord blood), the poorer a reader he seems to be for life. So our efforts have to be redoubled and refocused to reduce that difference, since it limits and harms boys, but also makes them less able to communicate well with girls or understand their own feelings and choices. Parents need to know that reading and talking to their boys is vital – it humanises them and helps them be better people. Even if they never catch up with most girls, we can't just let things be.

On a wider front, the slower development of most boys, cognitively and physically (not in size, but in motor control) adds to the problem. They very often find the formal nature of schooling to be acutely stressful. Forced into sit-down schooling too young, they grow to dislike school, behave badly and learn less well. Their life chances are reduced. It is a serious risk factor (most men in prison did terribly at school). It has a biological origin. And if we know about it we can work to prevent it.<sup>2</sup>

It's not only boys who are affected when we fail to take gender differences into account. Leading girls' educator JoAnn Deak<sup>3</sup> points out that girls face a danger here too. Because they are better thinkers, and more willing to sit still, they are seen as 'good' at school in the early years. These girls attract much praise and affirmation from parents and teachers. But this can lead to girls orientating themselves to praise from adults, rather than learning for its own sake. They become 'pleasers' and are shaped towards being tidy, compliant and approval-seeking in their approach to learning. Since we now have serious mental health issues arising from perfectionism and overachieving in girls, this clearly harms them as well.

There are hundreds of small but impactful factors like this – not just between boys and girls, but within the genders too, which cascade into their life chances. Most boys tend to be larger and stronger when they are young and when they are adults (there is a window in the early teens when girls are bigger than boys). And so being specifically trained to be gentle and not use physical domination needs to be a part of boys' upbringing and socialisation – with school programmes etc. that teach and model positive masculinities.

The wish to not acknowledge any biological brain differences between males and females is well intentioned and understandable. Within living memory, women were denied the vote, the right to own property, and to refuse sex from their husbands, and kept from positions of power and many professions, sports, or economic activities; all on the basis that they were an inferior creature from men. This outrageous gender apartheid persisted for thousands of

years and blighted hundreds of millions of lives. No wonder there is resistance to any idea that we might be different beings, most of us, along gender lines. Fear of turning back the clock is real and natural.

Yet progress depends on facing facts. I think we have reached the point where we can nuance this argument, and deal with real differences without turning them into grounds for discrimination. No two humans are identical or equally equipped, yet equality does not depend on arguing this. And reaching our potential always starts with confronting our real selves. (We build ramps on public buildings to create equality, we don't ignore that some people have different needs and call that being fair).

## HOW DIFFERENCE WORKS

Hormones are the way that gender is mediated in the bodies of all animals including human beings. They lead to what is called gender dimorphism – different body shapes, organs, as well as brain structures and behavioural traits. My favourite is the elephant seal: the females are a hefty 300 kg, but the males an astonishing ten times larger – 3 tonnes. It's a very lucky break that in humans, our ecological niche required us to be actually very similar. Women needed to be able to throw a spear, and men to raise a baby. So we haven't so far to go towards equality. Feminism will be a long time coming to elephant seals.

In the economical way of nature, sometimes the same hormones – such as luteinising hormone – are used for completely different purposes in boys and girls. Hormones are not simple, but that does not mean we can ignore them. Testosterone does not cause aggression, but in combination with the stress hormone cortisol it can make aggression more likely when the conditions are right. Even within the genders, kids differ enormously in their individual levels of these hormones. No two boys or girls are alike. But we can still mitigate the effects reliably. Secure, well-loved and empathically raised boys and men are rarely aggressive. Knowing about that risk can make us doubly determined to help our boys, especially those who have more masculinised bodies and brains, to be thoughtful, caring, and safe.

Again, it's important to see the subtleties. It's recently been found that absolute testosterone levels are not as significant as a change in the level, which can result from situations of loss or exclusion, even momentarily. Male human beings are far more susceptible to shame – most find it more toxic even than physical pain. This is strongly believed to be linked to evolutionary factors.<sup>4</sup> A boy doesn't need to be top of the pack, but he needs to feel part of the pack. It's the exclusion that he feels to be life-threatening. And so we have to work with at-risk boys to find better roles, and better ways to belong. (Once in a youth group I helped to run, we had a number of burglaries at our hall. Having a fair idea of which boy was responsible, we asked him to keep an eye on the venue for us. He would visit it at night to make sure it was locked and safe. Problem solved.)

What you were taught in university is not what we now know is true. If you studied social science in the 1970s you would have likely been told that there are more variations within

the genders than there are between them. That might impress a first year tutorial group, but it is both a grammatical and a statistical nonsense. You can't compare two variable groups except by comparing the average or the mean for those groups. And if those averages differ, you have lost your case. (Fish vary from minnows to whale sharks, but that doesn't make them people.) We can only compare by separate traits. So in IQ there is no difference, other than that more males are at the extremes. But in upper body strength, or tallness, men predominate. Girls begin puberty sooner and get it over much faster. Boys have hormonal changes at four, and again at eight, girls normally do not. And it has very different effects on their bodies. And so on.

The other simple idea often taught was that sex is what you are born with, and gender what you are given. No serious scientist today thinks it's possible to separate those – they interact in infinitely complex ways, as Cordelia Fine argues beautifully in her book *Testosterone Rex*.<sup>5</sup> We have largely given up using the word gender to indicate what is purely cultural. When young people decide they are transgender, it's their actual bodies that they want to change, not their conditioning.

Those who argue for ignoring gender often cite Cordelia's earlier book *Delusions of Gender*,<sup>6</sup> usually without having properly read it. Her stance is not that gender is a delusion, but that some rather silly generalisations have occurred in its name. Nobody I know is arguing with that; we are not from separate planets. But *Delusions* has a separate problem: it is far from being the mainstream view of neuroscientists. Brain science is a huge field, with a body of knowledge that is intensely scrutinised and peer reviewed, and its practitioners are acutely aware of the risks of sexism. A number of leading voices<sup>7</sup> have taken its author to task for skirting over the hundreds of known differences on a chemical, anatomical and structural level in the human brain, between most boys, and most girls.<sup>8</sup>

That may well be why Cordelia wrote *Testosterone Rex* six years later. Like *Delusions* it's a lively read and I highly recommend it. But at the same time, it suffered one flaw – the book's cover conveys a somewhat different message to its actual conclusions. It's hard not to suspect that the further the author got into the material, the more complicated the picture grew. The author concludes, in the end, that “Sex does indeed matter, but in a complicated and unpredictable way” and “There *are* sex differences that create differences in the brain, (but) sex isn't the determining factor in brain development that it is for the reproductive system”. For which we can all be very grateful. We are equal, but we are not the same. Not even within a gender, let alone between them.

The evidence for gender differences grows exponentially. In 2017, the Journal of Neuroscience Research dedicated a whole edition to reporting on the hundreds of studies and examples that were emerging of differences. Alan Schore's sweeping 2015 review, focussed on the unique vulnerability of the male brain in utero and in the first 12 months of life, pretty much explained all the observable facts - the incarceration rates, suicidality, drug addiction, disposition to violence, school difficulties and behaviour disorders in which boys and men so predominate. Like climate denialism, gender denialism simply cannot stand against the tide.

What has changed in our thinking is that the categories are not hard and fast. Once you abandon binary thinking, and see gender as a continuum, then you don't talk about a male brain or a female brain, but you can allow degrees of masculinisation or feminisation. We all live on that line.

It's shocking how much this can matter. The sleeping drug zolpidem, marketed as Ambien, has been used by millions of people for decades. During early testing, it was found that most women metabolised the drug at half the speed of most men. Their brains were still slowed down far into the next day, whereas men woke mostly free of its effects. But this was not made public for twenty years. Researchers believe that this may have led to tens of thousands of premature deaths from vehicle accidents, falls in the elderly, and in addition, possibly higher cancer rates (since it is also a suspected carcinogen) .<sup>9</sup> That's a terrible price to pay for denying the existence of brain or body differences between women and men.

Finally, and on a much happier note, there is one other new thing helping us understand gender's complex dance between biology and culture. The existence of people who are LGBTQI clearly shows that conditioning does not solely or finally determine us. The central understanding of alternate sexual identities is that people are 'born this way' and it's an essential part of who they are. If gender were not real, then transgender would not be real either, along with all the other variations that exist despite society's continual and oppressive pressure on us all to be the same. Gender is one of the delightful diversities of human beings, and if we can learn to manage it better from babyhood onwards, our boys and girls might live in a far happier world. To do that, we have to know the material we are working with, the unique biology of every single child, and then we can do our jobs as parents and teachers and human beings.

Warmly,  
Steve Biddulph

1. Loveless, T., *Girls, Boys and Reading, The Brown Centre Report on American Education*, March 2015. You can read this online at <https://www.brookings.edu/research/girls-boys-and-reading/>. 'The origins of the gender gap are hotly debated. The universality of the gap certainly supports the argument that it originates in biological or developmental differences between the two sexes. It is evident among students of different ages in data collected at different points in time. It exists across the globe, in countries with different educational systems, different popular cultures, different child rearing practices, and different conceptions of gender roles. Moreover, the greater prevalence of reading impairment among young boys – a ratio of two or three to one – suggests an endemic difficulty that exists before the influence of schools or culture can take hold' [xiii].
2. Schore, A.N. (2017), 'All our sons: The developmental neurobiology and neuroendocrinology of boys at risk', *Infant Mental Health J* Jan, 38, 1, 15-52. You can read this online at <http://onlinelibrary.wiley.com/doi/10.1002/imhj.21616/full>
3. Deak, JoAnn, *How Girls Thrive*, Green Blanket Press, Columbus, Ohio, 2010.
4. Wilkinson, R. and Pickett, K., *The Spirit Level: Why Greater Equality Makes Societies Stronger*, Allen Lane, London, 2009.

5. Fine, Cordelia, *Testosterone Rex: Unmaking the Myths of Our Gendered Minds*, Norton, New York, 2017.
6. Fine, Cordelia, *Delusions of Gender: How Our Minds, Society and Neurosexism Create Differences*, Norton, New York, 2010.
7. McCarthy, Margaret M., Ball, Gregory F. (2011), 'Tempests and tales: challenges to the study of sex differences in the brain', *Biology of Sex Differences*, 2, 1, 4 ISSN 2042-6410. DOI:10.1186/2042-6410-2-4.
8. 'An Issue Whose Time Has Come: Sex/Gender Influences on Nervous System Function' (2017) *Journal of Neuroscience Research* 95, 1-2.
9. Lehmann, Claire, 'The XX factor: When gender differences are ignored in health studies, it's women who pay the price', *Commentary Magazine*, 15 March 2017.