

FIGHTERS and FASHIONISTAS

The Spectre of Stereotyping

This is the third of three essays relating to a female bias in picture book content. The first essay, *COOL not CUTE*, examines the origins of this bias and how it manifests itself. The second essay, *NATURE and NURTURE*, looks at some of the scientific evidence that suggests that BOTH nature and nurture are responsible for sex differences in children's preferences. This final essay is intended to be read after the other two. All three essays can be found at coolnotcute.com

Putting gender aside for the moment, what I'm arguing in *COOL not CUTE* is that some children's preferences, partially innate or otherwise, are being neglected by the picture book industry and that this neglect has resulted in those children becoming disadvantaged in terms of their reading ability. This group of children is made up of both boys and girls. It just so happens that the majority of the children with these preferences are boys, which is why this neglect has contributed to a gender gap in reading ability. Arguably, it's not that important whether the missing ingredients listed in *COOL not CUTE* are boy-typical or girl-typical in their appeal. All that matters is that these ingredients are included in picture books to make them appeal to this group whose reading tastes are currently being neglected.

By associating particular preferences and abilities with individual sexes, I've taken the argument into the domain of sexual politics. One concern that some readers may have about describing preferences and abilities as boy or girl-typical is that this will inevitably lead to sexual stereotyping; that it will be accepted that boy-typical innate preferences such as technology are unsuitable for girls or that it will be accepted that boys will inevitably come second in girl-typical innate abilities such as literacy. I don't believe that this has to happen and I hope to address such concerns in this essay.

Excavators and Pitfalls

In *NATURE and NURTURE* I outlined some of the scientific evidence suggesting that there are innate sex-differences between boys' and girls' preferences and abilities. One of the biological factors that scientists believe is responsible for innate sex-differences is the amount of testosterone a foetus is subjected to in the uterus. Research carried out by psychologist John Manning¹ and others suggests that the *Digit Ratio* of the lengths of a person's ring to index finger is a rough indicator of that person's prenatal testosterone levels.²

One ability that is thought to be partly determined by prenatal testosterone levels is the ability to carry out visuo-spatial tasks. *Brainsex*, a 2005 BBC documentary about the science behind sex differences featured an experiment to test this theory³. At the beginning of the experiment, the ten

¹ <http://www.swansea.ac.uk/staff/academic/humanandhealthsciences/manningj/>

² It's thought that the genes that trigger the production of prenatal testosterone also determine finger growth. The Digit Ratio is calculated by dividing the length of the index finger of the right hand by the length of the ring finger on the same hand. A longer index finger gives a ratio higher than 1, while a longer ring finger gives a ratio of less than 1. The lower the ratio, the higher the level of prenatal testosterone.

³ You can see a clip of the documentary, featuring this experiment here: <http://youtu.be/c23sT4cDcUQ>

individuals taking part (five men and five women) were asked to line up according to their prenatal testosterone levels, as estimated by their digit ratios. The women were at the low testosterone end of the line and the men at the high testosterone end. However there was one anomaly; the digit ratio of one of the women, Grace, placed her amongst the men at the high testosterone end.

All ten individuals were then trained in the use of a backhoe loader (a digger) and asked to carry out a series of tasks intended to assess their visuospatial skills. Generally, the results of this test matched those predicted by the digit ratio assessment, with the five men scoring higher than the four women with the lowest testosterone levels. However, the joint highest score was achieved by Grace along with one of the men.

Although this experiment suggests that men are *generally* better at visuospatial tasks, it also demonstrates the pitfalls of stereotyping. None of the men in the experiment were better at the task than Grace was — in fact the majority were worse. If Grace had applied for a job as a backhoe operator and her prospective employer had ruled her out simply because she was a woman (and therefore less likely to have a male-typical ability) the man that was employed in her place would, in all probability, have been less skilled at the job. In case you're wondering, Grace actually worked as a flight test engineer on fighter aircraft.

There are lots of children who, like Grace, have abilities and preferences that are not sex-typical. Some of the statements I've made about boy-typical or girl-typical preferences and abilities in my other two essays will be completely at odds with some parents' experiences. Indeed some of them are at odds with my own parental experience.

A Parent's Tale 2

In *COOL not CUTE* I outlined my son Max's first experiences with books and how this led to my awareness that boys' reading preferences were under-represented in comparison to girls'. Five years after Max, my daughter, Laura, was born. While it would suit my argument to say that, in comparison with Max, Laura took to reading like a duck to water, she didn't. Although my wife and I put just as much effort into engaging Laura's interest in reading, she was and is a far more reluctant reader than her brother. Laura is now eleven, and while she does read the occasional book by choice, she will tell you that she much prefers films and TV.

The reason my son's reading experiences made me think there was a gender bias in the picture book industry and my daughter's didn't is that, compared with her brother, we had very little difficulty finding picture books that accurately reflected my daughter's preferences. Like many younger siblings, much of Laura's early reading was drawn from her older brother's picture books, but she soon developed her own tastes. At the age of four Laura was devoted to the *Disney Princesses*. As well as watching the films on DVD, she liked dressing up in princess costumes and playing with princess dolls. We had no problem finding her picture books that reflected this enthusiasm. While many of these books featured traditional gender stereotypes, some of them were more subversive, showing that princesses did not have to be well-dressed, well-mannered or well-behaved; they could be scruffy, rude and adventurous as well. It's worth noting that both the traditional and the subversive picture books seemed to be squarely aimed at girls. I don't recall coming across a princess picture book (or a prince picture book with similar *royalty, romance and relationships* content) that had been masculinised to make its girl-typical content more appealing to boys.

Laura's devotion to princesses lasted until she was six and her tastes have not been so conspicuously girl-typical since. Shortly before she turned eight, she decided she disliked pink and

asked if we would replace all the pink items in her bedroom room for her birthday. On a trip to Hamleys toy store, in the days when girls and boys toys were kept on separate floors⁴, Laura gave the girls' floor a fleeting glance before joining her brother to browse the boys' floor instead.

Laura still has many girl-typical preferences; despite my efforts to get her hooked on Philip Reeve, most of the books that she chooses to read are by Jacqueline Wilson. However she seems to have little regard for the notion that media or activities are likely to be more or less suitable for her simply because they are seen as being girl or boy-typical and I am proud of her for that.

A few years ago, Laura started going to a local Brownie pack. She'd wanted to try it as most of her school friends were already members. However, after a few visits, she decided the activities didn't appeal to her and stopped going. A few months later, she went on a family camp organised by her brother's Scout group and enjoyed it so much we suggested she might like to join the group's Cub Scout pack. Laura was keen to give it a try. Although girls were welcome to join, there were none in the Cub pack at that time. We were worried that Laura would find being the only girl off-putting, so were pleased when one of her female friends agreed to try it with her. Laura has now been in the group for over two years and has "gone up" to the scout section.⁵

In 2011 the number of girls joining the Scout movement exceeded the number of boys for the first time⁶ and in my home county of Nottinghamshire, twice as many girls joined as boys. When Laura first joined, a couple of the leaders in her group mentioned to me that one of the things that they thought made Scouts appealing to boys was that it was an exclusively boy-centred environment and they were concerned that the influx of girls might undermine this. I said that I thought that as long as the movement continued to focus on activities with boy-typical appeal, this shouldn't be an issue. It would only be a problem if the organisation revised its activities to make them more appealing to girls. Indeed, it seemed clear to me that one of the reasons Laura had wanted to join the Scouts was because of the more adventurous boy-typical activities on offer. I've tried to take a similarly focussed approach to the picture books I've written principally for boys.

Lizzie's Clockwork Dragon

In *COOL not CUTE* I mentioned that *Pigs Might Fly* was the first technology-centred book I wrote where I felt I hadn't had to compromise on boy-appeal. However, once published, I was surprised to find how popular this book was with many girls.

When I wrote my next technology-centred picture book, I decided I should try to acknowledge this potential female readership while maintaining the story's boy-appeal. The book was called *Tom's Clockwork Dragon*. The eponymous Tom was a young toymaker with a flair for clockwork automata. Although I felt the story needed a male hero, to maximise its boy-appeal, I gave it a heroine for girl readers to relate to as well. So Tom teams up with Lizzy, an armourer's daughter who shares her father's skill with a hammer and tongs. I tried to balance the two character's qualities, so while Tom is smart and resourceful, Lizzie is more practical and the braver of the two. Although Lizzie was there to reflect potential girl readers, I didn't want to compromise the book's

⁴ The fact that the boys and girls departments are no longer segregated in this way is largely thanks to the efforts of Laura Nelson, the neuroscientist mentioned in my essay *NATURE and NURTURE*. While I might not agree with her on the issue of innate preferences, I think she is to be commended for her role here.

⁵ UPDATE: Laura left the Scouts a couple of months after this essay was first published.

⁶ <http://www.bbc.co.uk/news/uk-13082946>

boy-appeal by making concessions to girl-typical taste. So Lizzie is definitely not cute and there is no hint of romance between her and Tom. Her character could just have easily have been a boy.



Mark Oliver's illustration of Tom and Lizzie making the clockwork dragon

Although I think it's one of my better picture books and has proven popular on school and library visits, it didn't sell well in the UK, was not picked up by any foreign co-publishers and is now out of print.⁷ I mention it here because the story includes most of the boy-friendly ingredients I listed in *COOL not CUTE* and I think it demonstrates that it's possible to create a book that appeals uncompromisingly to boy-typical preferences without reinforcing sexual stereotypes or making girls with similar preferences feel excluded.

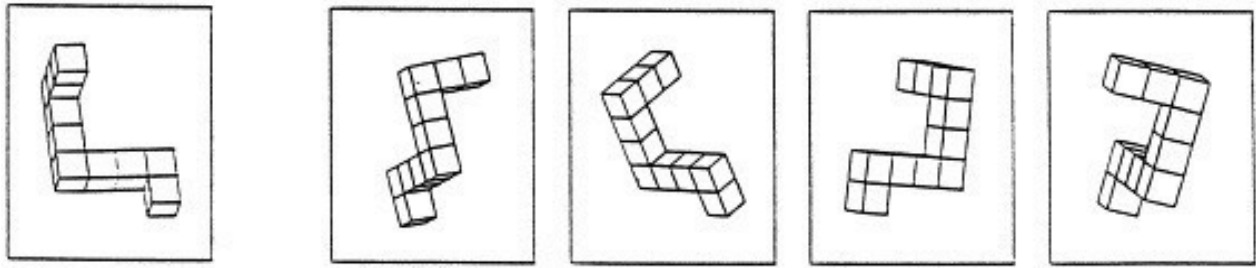
I'm aware that by making Lizzie's character conform to boy-typical preferences, I was challenging traditional sexual stereotypes. However, I'm not advocating that all picture books should do this. In fact, I think that a preoccupation with challenging sexual stereotypes can have a detrimental effect on child literacy and child development in general. To explain this statement, I'm going to examine a recent controversy relating to sexual stereotyping in children's toys.

Lego Friends or Foes?

In the first chapter of her book *Brain Gender*⁸, the psychologist Melissa Hines notes that there is evidence of innate sex differences in visuo-spatial ability. This is the same ability that was put to the test in the digger experiment I described at the beginning of this essay. One test of visuospatial ability is mental rotations.

⁷ Update: OUP published a new version of this book, re-illustrated by Elys Dolan and retitled *The Clockwork Dragon*, in 2015

⁸ Melissa Hines, *Brain Gender*, Oxford University Press, 2004



A Mental Rotation Test: Which two of the four objects on the right are identical to the one on the left?⁹

Men are generally faster at these tests and score higher than women do. It's one of the largest sex differences in a cognitive skill and studies have shown that it's evident in infants as young as five months old¹⁰, which suggests that the difference is to some degree innate.

At the risk of sounding as if I'm showing off, I'm going to say that I generally score highly in these tests and others that are meant to assess visuo-spatial ability. Although my ability may be partly innate, I believe that it was greatly enhanced by environmental factors in my childhood and in particular, the time I spent playing with my favourite toy — Lego.

I adored Lego as a child. I would play with it for days on end and was still playing with it long after my school friends had stopped doing so. I suspect that without a childhood playing with Lego or a similar construction toy, I would not have developed the visuospatial skills that served me so well in my first profession as an architect and more recently as a paper-engineer. Indeed, studies have shown that playing with Lego significantly improves a child's visuospatial abilities¹¹.

Lego sets have been available for over sixty years. When the toy first became popular in the UK in 1960s it was marketed as being for both boys and girls, but proved far more popular with boys from the outset. In the decades since, the Lego company have experimented with a variety of product designs and marketing approaches¹² intended to open up the girl market, including a return to gender-neutral marketing for most of the 1980s. However Lego continued to prove more popular with boys. In short, Lego had its own gender gap to contend with.

About five years ago the Lego company decided to make another attempt at cracking the girl market. They spent four years researching how to give their products more girl-appeal, seeking the views of 3,000 girls in Germany, Korea, the UK and the US. This research resulted in the *Lego Friends* range, the defining characteristic of which is a much greater emphasis on characters. Each of the *Lego Friends* characters is named and has a distinct personality, interests and backstory. The doll-like mini-figures are far less stylised than regular Lego mini-figures and more recognisably human. Their hair and clothing is more detailed and they come in a range of realistic flesh tones instead of the generic yellow of the regular mini-figures.

⁹ The answer is the 1st and the 3rd

¹⁰ Moore, D. S. and Johnson, S. P. (2008). Mental rotation in human infants: A sex difference. *Psychological Science*, 19, 1063-1066.

¹¹ Mark J. Brosnan (1998) Spatial Ability in Children's Play with Lego Blocks. *Perceptual and Motor Skills: Volume 87, Issue* , pp. 19-28.

¹² You can find a very comprehensive article on the "Historical Perspective on the Lego Gender Gap" here <http://thesocietypages.org/socimages/2012/05/08/part-i-historical-perspective-on-the-lego-gender-gap/>



Emma's Fashion Studio set from Lego Friends and Ninja Ambush set from Lego's Ninjago Range

The range has been hugely successful, selling twice as many sets as expected and helping the Lego company to achieve a 35% increase in profit in the six months after its launch¹³. However, the range has also been very controversial; its characters are seen by many as reinforcing traditional gender stereotypes. An online petition¹⁴, with almost seventy-thousand signatories has called for Lego to withdraw the range and go back to the gender-neutral approach to product design and marketing the company employed in the early eighties.

The petition's organisers describe the range as "a pink Barbielicious product line for girls". This is not an unreasonable characterisation. Although *Barbie* is a young adult, whereas the five main *Lego Friends* characters are meant to be around 12-years-old, the themes of their world are similar to *Barbie's*: friendship, fashion, animals and glamorous leisure activities.

I've not signed the petition, nor do I intend to. I think the petition's organisers have overlooked that children's play is about fantasy. The element of fantasy is obvious in many of the Lego ranges popular with boys such as the recent Ninja-based *Ninjago* range. The themes of the *Ninjago* Ninja's world are combat, weaponry, mythological monsters and technology¹⁵. Most of these themes are shared by Lego's other boy-centred ranges such as *Star Wars*, *Super Heroes*, *Ninja Turtles*, *Lord of the Rings*, *Monster Fighters*, *Chima* and *Kingdom*.

In *COOL not CUTE*, I quoted author Joe Craig's observation that the imaginative worlds of boys are typically more violent and absurd than girls; I think these boy-centred ranges reflect this. And I think the reason why the launch of *Lego Friends* met with such strong opposition, while the launch of the boy-centred ranges did not, is that the fantasy depicted by *Lego Friends* is much closer to reality — so adults are more liable to apply real-world value judgements to it. Many of the characters in the boys' sets are far more dubious role models than any of the *Lego Friends* characters. However I suspect that few parents worry that playing with a *Ninjago* set will turn their son into a ninja. This is another example of a bias against one sex's preferences — only this time, it's girls' preferences that are being unfairly discriminated against.

¹³ Profit relative to previous year. Figures taken from this article: <http://www.guardian.co.uk/lifeandstyle/2012/aug/31/lego-friends-profit-rise?INTCMP=SRCH>

¹⁴ <http://www.change.org/petitions/tell-lego-to-stop-selling-out-girls-liberatelego>

¹⁵ These are futuristic ninjas equipped with fighter planes and assault vehicles.

I think we can assume that the organisers of the petition would also object to the boy-centred sets, since the petition calls for the Lego company to “Go back to advertising and offering all LEGO to boys and girls!” The petition praises the gender-neutral approach to products and marketing that the company took in the early eighties, which its organisers seem to regard as the *good old days* as far as Lego is concerned. These are the same *good old days* when there were far more boys playing with Lego than girls. This would be fine if the only benefit of playing with Lego was that it kept children entertained, but the benefits that playing with construction kits brings to the development of visuospatial abilities, an ability less typical in girls, makes this opposition to girl-targeted Lego seem misguided — especially when this opposition is intended to break down sexual stereotypes.

While I accept that playing with *Lego Friends* might encourage girls to think in a gender-stereotyped way that gender-neutral Lego would not, it seems obvious that one of Lego’s aims in creating the range was to get girls who were previously playing with *Barbie* dolls (which are arguably even more gender-stereotyped) playing with Lego construction kits instead. An article in *Businessweek* magazine¹⁶ stated that “the *Lego Friends* team is aware of the paradox at the heart of its work: To break down old stereotypes about how girls play, it risks reinforcing others” and quotes neuroscientist Lise Eliot¹⁷ who says, “If it takes color-coding or ponies and hairdressers to get girls playing with Lego, I’ll put up with it, at least for now, because it’s just so good for little girls’ brains.”

In many ways, Lise Eliot seems like a natural ally for those opposing *Lego Friends*. Her book, *Pink Brain, Blue Brain*¹⁸, examines the evidence for innate sex differences and is critical of much of it. However, while Eliot shares Cordelia Fine’s scepticism of Jennifer Connellan’s baby mobile study¹⁹, she acknowledges that Melissa Hines’ monkey experiment “makes a strong case” that toy preferences are innately biased²⁰.²¹

Eliot’s views on innate sex differences are characterised by her book’s subtitle — “*How Small Differences Grow into Troublesome Gaps — and What We Can Do About It*”. She accepts the existence of small innate sex differences but argues that they are greatly magnified by environmental factors that cause gender gaps to open up across a range of abilities. She claims that children’s brains have the “plasticity” or adaptability to enable them to close these gaps, but to do so, “adults need to be aware of boy-girl differences so that we can help children compensate for them early on”.²² Instead of a gender-neutral approach to child development, she suggests

¹⁶ <http://www.businessweek.com/magazine/lego-is-for-girls-12142011.html> - p4

¹⁷ <http://www.liseeliot.com>

¹⁸ *Pink Brain, Blue Brain: How Small Differences Grow into Troublesome Gaps – and What We Can Do About It*. Lise Eliot, Houghton Mifflin Harcourt, 2009

¹⁹ *Pink Brain, Blue Brain*, Elliot. p.72-73

²⁰ *Pink Brain, Blue Brain*, Elliot. p.108

²¹ The two studies referred to in this paragraph are examined in my other essay, *NATURE and NURTURE*

²² *Pink Brain Blue Brain*, Elliot. p.313

differing approaches for boys²³ and girls, which reflect their different preferences, but are intended to close the gaps on their differing abilities.

Eliot's tolerance of *Lego Friends* is in keeping with this approach. Advocating that girls should be encouraged to play with construction kits in *Pink Brain*, *Blue Brain*, Eliot states that "translating a series of instructional diagrams into a three-dimensional structure provides excellent practice at the kind of visuospatial skill that is linked to higher mathematical achievement."²⁴

Although I don't accept everything Eliot says in her book, I think her approach to closing gender gaps is spot on and applies as much to enhancing boys' literacy as it does to enhancing girls' visuospatial ability. Sometimes, exploiting stereotypical preferences can be an effective way of addressing stereotypical sex differences in abilities, whether that means getting girls playing with Lego, by giving them a construction kit containing dolls, or getting boys reading, by giving them a picture book featuring combat.

Spanning the Spectrum (A-Million-Sizes-Fit-All)

The sort of traditional female stereotyping found in *Lego Friends* is also evident in many picture books including many of the princess books my daughter was fond of. A tomboy character like Lizzie, who reflects traditional male stereotyping, represents the other extreme. In the middle of this spectrum sit gender-neutral female characters who combine boy-typical and girl-typical abilities and preferences.

The range of male characters found in picture books is a lot narrower. The traditional male stereotypes of warriors, super heroes and crime-fighters that populate Lego's boy-centred ranges, as well as children's films, TV shows and video games, are largely absent from picture books. I argued in *COOL not CUTE* that this is because of a female bias against depictions of combat and peril. Male characters who reflect traditional female stereotyping are also largely absent, but this reflects a bias by society as a whole; for some reason we're a lot more comfortable with girls being masculinised than boys being feminised. With both extremes of male-stereotyping being off limits, male characters in picture books tend to be grouped more tightly around the central gender-neutral zone in comparison to female characters.

I suspect that many signatories of the *Lego Friends* petition would regard the gender-neutral zone as the ideal position for picture book characters. One of the things that prompted me to write this essay was a publisher's blog post which commented that "in an ideal world, maybe we would be publishing only gender-neutral titles with gender-neutral covers."²⁵ This struck me as a far from ideal world. While I have no problem with gender-neutral picture books, I have a big problem with the notion that an exclusively gender-neutral, one-size-fits-all approach to picture book content represents an ideal solution. All children are different and I think an ideal approach to picture book content would be one that reflects the complete diversity of children's reading preferences, whether they are traditionally sex-stereotyped, reverse-sex-stereotyped, gender-neutral and every variation in between.

²³ Among her recommendations for boys, Eliot echoes Richard Tremblay by including rough and tumble play, such as wrestling. *Pink Brain. Blue Brain, Elliot.* p.137-8

²⁴ *Pink Brain. Blue Brain, Elliot.* p.141-2

²⁵ I should make it clear that the publisher that wrote this was not advocating this approach.

This would mean filling in the gaps in the spectrums I've described above, on both sides, for both boys and girls. It also means cross-pollinating between them. Not all girls who find the boy-typical ingredients included in a book like *Tom's Clockwork Dragon* appealing will relate to a tomboy character like Lizzie. In an ideal world there would be books that feature all these ingredients aimed squarely at girls, but with more feminine females as their protagonists.

Literacy is an essential life skill, so it would be unfair to give one sex an advantage over another in attaining it — but I believe that's exactly what the current gender bias in picture book content is doing. If we want to close the literacy gender gap, picture books need to accept and acknowledge the full range and diversity of boys' preferences as much as they accept and acknowledge the range and diversity of girls'. That means publishing many more books that contain traditional male stereotypes such as warriors, superheroes and crime-fighters. It also means publishing some books targeted at boys that reflect traditional female stereotypes, as there are some boys that want to read ballet books and fairy books just as much as girls do.

While we should be wary of the pitfalls of sexual stereotyping, we need to stop treating picture books as a battleground for sexual politics. This means calling a truce on both sides; not just the "politically correct" parents, who won't let their daughters read a princess book because they fear it will feminise them, but also the "politically incorrect" parents, who won't let their sons read the same book for exactly the same reason.

Any book that helps a child to form a habit of reading, to make reading one of his deep and continuing needs, is good for him.

Maya Angelou