

EMILY'S
PINK PRAM
MAKES HER
PUKE

JOSH
LONGS TO
PLAY WITH
HIS SISTER'S
BARBIE
DOLL

OLIVIA
PREFERS HER
NURSERY RHYME
CDS ARRANGED
ALPHABETICALLY

GEORGIA
KEEPS
MAKING
TOM CRY

MAX CAN'T
WAIT TO TALK
ABOUT HIS
FEELINGS

Who knew? The secret lives of boys and girls

We are constantly told that boys are hard-wired to be tough and physical and girls caring and emotional – but one neuroscientist is daring to think differently. Helena de Bertodano meets Lise Eliot

My daughter turned 5 recently and for her birthday we gave her a bright pink Hello Kitty scooter. She invited only girls to her party, and they ate pink and white ice-cream cake off Princess plates and drank pink lemonade from Princess cups. They made flower necklaces and played Pin the Crown on the Princess.

I'm a bit embarrassed to admit all of this – especially now that I've read Lise Eliot's book *Pink Brain, Blue Brain: How Small Differences Grow into Troublesome Gaps – and What We Can Do About It*. In it she talks about the way most parents, almost without thinking, segregate their children by gender, inundating the girls with Barbies and ballet, the boys with diggers and football. It constitutes, she says, "a round-the-clock indoctrination into the world of brave, cheeky boys and cute, squeaky girls, well before they even start primary school". Not only is it unnecessary, says Eliot, it is not in our children's best interests.

So when I meet her in Chicago, I ask her: am I doing my daughter a disservice? "I don't think you are," she says kindly. "But I think as a culture we are. We let the marketers decide this for us. If you'd gone to the store and there had been an equally attractive [gender-neutral] scooter, maybe you'd have got her that."

Hmm, maybe. And maybe not. My daughter had her heart set on that pink scooter. But in her first five years she has spent almost as much time playing with her two brothers' trains and Magna-Tiles as she has with her dolls and tea sets. Now that she is going through a pink-princess phase, my attitude is just to humour it, assuming that it too will pass.

"A lot of growing up is rejecting the last phase," confirms Eliot. "So that's great if she can get it out of her system when she's 5, and not have to be obsessing with her femininity when she's 15. I just think we shouldn't assume it's all free will. It's marketing that creates these choices for us."

Eliot, who is Associate Professor of Neuroscience at the Chicago Medical School, speaks from experience, both as a scientist and a mother. At 48, with a daughter and two sons herself, she says she wishes she had known more about the plasticity of young brains when her first child was born 15 years ago. "We all assume that children are hard-wired to be either boys or girls. People think that if boys' and girls' brains are different it's because they're born that way. They don't appreciate that your brain is really just a reflection of your life."

We meet at her home in Lake Bluff, a serene suburb of Chicago. Although her book is packed with data and research, she talks in a down-to-earth and accessible way about her own experience as a mother and makes no claims to perfection. "I learnt everything the



'I started writing a book about the differences between the brains of boys and girls. But the evidence just wasn't there'

hard way," she says. "There are so many things I wish I'd done differently, particularly with my daughter. I took her on bike rides with me and tried to encourage her physical bravery, but I absolutely should have signed her up for more sports. Now when I suggest to her that she try out for something not stereotypically feminine, she says: 'Oh, Mom, it's that darned gender book again – I'm not your guinea pig.'"

Expecting her to dismiss the question as facile, I ask her if she is suggesting that it would be better from birth if we dressed boys in pink and gave girls guns. She considers this carefully before answering. "Because the brain is so plastic early on, I do think we can do more to bring out untraditional strengths in boys and girls if we want to. They're not hard-wired for anything: not speech nor maths nor interpersonal skills, nor reading: nothing. Most of what we do with our brains is acquired through experience."

But it is not as simple as switching the trucks and the dolls. "Many parents have tried this, to little effect," she writes in her book. "Girls turned the trucks into families, boys played catch with the dolls, and both sexes knew there was something fishy going on."

It has more to do with how you treat your children from the very earliest days. Gender differences, she argues, arise from the way babies and children are nurtured. In pushing this point, she is going against the grain of current thinking. Books such as *The Female Brain* and *The Male Brain* by neuropsychiatrist Louann Brizendine maintain the entrenched

view that men are from Mars, women from Venus. Eliot rolls her eyes when I mention Brizendine. "She gets it completely wrong." In her book, Eliot says that Brizendine's statement that baby boys do not bond as easily as baby girls with their parents "is not only wrong, it's downright subversive". If parents think that boys are less social, they are likely to interact less with them, thus making it a self-fulfilling prophecy.

She is equally derisive about the idea that females are alone in their ability to read faces, defuse conflict and form deep friendships whereas boys are hard-wired for aggression and are less empathetic.

Not that Eliot is claiming that boys' and girls' brains are identical. Only that we as a culture exaggerate minor differences until they become major ones. "Our philosophy about these things actually shapes our parenting and our culture: if you believe that boys and girls are fundamentally different, it can't help but alter the way we act and the expectations we have. Of course, genes and hormones play a role in creating boy/girl differences, but they are only the beginning. Social factors are proving to be far more powerful than we previously realised."

We go upstairs to her children's bedrooms. Naturally, I am expecting something very gender-neutral, so it is a surprise to see that the room shared by her two boys, Sam and Toby, aged 14 and 11, is stuffed full of car paraphernalia, with fighter planes dangling from the ceiling. The bedroom of her daughter Julia, 15, has a predominantly pink theme, accentuated by a bright pink fluffy lampshade.

I look at her and she laughs: "I know, I know! Maybe you're doing exactly the right thing with your daughter and her pink scooter, because I did exactly the opposite. Julia had a blue bike because we knew we weren't going to buy another bike when her little brother was big enough. She had cleats [sports shoes with studs] that could be handed down – 'No pink cleats for you,' we said. Yet here she is, this hyper-feminine teenager who lies awake at night thinking about what she's going to wear for the prom. She has more mascaras than I've owned in my entire life."

Eliot says that even the most progressive parents subconsciously treat their sons and daughters differently. In her book, she describes an experiment where newborns are dressed in gender-neutral clothes: "People are very disconcerted if they don't know if a baby is a boy or a girl, and they don't know how to interact with the baby, which is telling in itself." When adults were misled into thinking they knew the sex of a baby, by calling a baby girl ➤



Jonathan or dressing a baby boy in pink, they would interpret identical behaviour through a gender-tinted lens. Adults would describe the “boys” (actually girls) as angry or distressed more often than those adults who knew their true sex. And they would describe the “girls” (actually boys) as joyful and engaged more often than adults who knew the babies were boys.

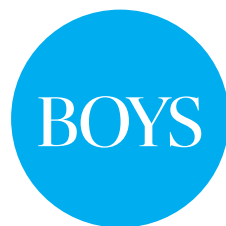
In another experiment mothers were asked to gauge the ability of their 11-month-old babies to negotiate a carpeted slope by changing the slope's angle based on what they thought their children could handle. Mothers of infant boys were almost spot-on in predicting their sons' abilities, but the girls' mums severely underestimated their daughters. “Are mothers therefore the culprits in limiting girls' athletic prowess?” Eliot asks.

Eliot says her husband, also a scientist, is more emotionally articulate than many men, but that they still fall into fairly gender-typical roles at home. All the juggling – children, house, job – falls squarely on her shoulders. “I think women's lives have improved enormously, but they could be better. I feel so stressed most of the time I just want to put a gun to my head,” she adds candidly. “And I don't think my husband suffers that as much.”

As a child growing up near her current home, Lise had three older brothers and spent most of her time trying to get herself included in their games. “I don't know if it's just the way I am, or having brothers, but I was never into girly things. I liked to play with my brothers' Matchbox cars and tag along with them. I think playing with my brothers' toys probably fuelled my interest in how things worked. That's what I liked about biology: understanding how the body works.”

Nevertheless, she does feel that she was born before girls were routinely encouraged to be sporting. “Had I been born ten years later, I think I'd have been some kind of athlete. I always really liked sports.” Since her childhood, she says, the pendulum has swung back, some would say too far in the opposite direction, shortchanging boys. “Girls are now playing more sports and being taken seriously as maths and science students,” says Eliot as we set out to collect her children from school. “They can be anything they want: athletes, artists, cheerleaders. Boys have not been given the same breadth, and it has led to what some people call a boy crisis in education, not so much because of parent culture but because of kid culture and school culture.”

Most of the time Eliot does not intervene when she hears parents treating their children in gender stereotypical ways. But occasionally she cannot bite her tongue. “The other day I was at my son's soccer game. It's a boys' league, but there is one girl on the team and the mother of one of my son's team-mates ➔



BOYS *How to break male stereotypes*

TALK TO YOUR BABY BOYS

Of all the purported tricks for raising smarter children, this is the only one that has been scientifically proven. Parents of boys should err on the side of talkativeness. Use every interaction as a chance to communicate: narrate your activities, sing songs and introduce your baby to word play such as rhymes and alliteration. Baby talk, or “parentese”, is an especially effective style of communication, as research has shown that it exaggerates and emphasises the differences among speech sounds. What don't work, however, are baby DVDs. As one recent study found, an hour a day of such viewing between 8 and 16 months of age was associated with a 17 percentile drop in vocabulary development.

LISTEN, TOO

By the end of the first year, there are probably several words hidden amid their babababas and mamamamas, though few parents pay close enough attention to notice them. So here's another chance to promote your child's verbal development, especially in boys: stop, listen and respond to his vocalisations.

In other words, talk to your baby, but don't talk over him. Babies don't coo or babble much without an audience. They do it to communicate, and you can increase and improve their verbal output by responding, commenting on, and, especially, imitating your baby's budding vocalisations.

READ STORIES

Of course, babies of both sexes should be treated to this experience on a daily basis, but it may be especially important for boys, many of whom could use the extra dose of language and emotional enrichment. Even if your baby's only interest in books involves grabbing them and chewing, this stage shall pass.

STOP PARKING YOUR BABY

Boys' motor development can suffer from being parked in various infant holders. An additional issue for boys is the social isolation these seats enforce. Carted around like an extra handbag, a baby in a car seat simply doesn't get the same amount of attention he would receive if he were being held in his parents' arms or in a sling or front carrier. Limit the number of such seats to the bare minimum – a car seat (but only for car journeys), a high chair (but only for meals) and a pushchair (but only for long walks).

BE RESPONSIVE

Simply put, boys are often more needy as infants than girls are. They are less physically mature and take longer to develop the self-calming skills, such as hand-sucking or pulling into a tightly tucked posture, that help them compensate when overwhelmed. Parents may need to step in sooner with a boy, picking him up, changing his position, or giving him a soothing ring to grasp and suck on. Here is where stereotypes can get in the way. In the general spirit of “toughening them up”, parents may let their baby boys fuss and squirm longer, or they may resort to artificial stimuli to entertain them without helping them to discover their own self-calming skills.

TEACH MOTOR SKILLS

These don't come as easily to boys as girls, but they are essential for the many pencil and paper tasks of primary school. If they don't gravitate towards writing and drawing, pre-school-age boys can nonetheless work on their hand skill and co-ordination through tasks like cutting, stamping and building with small construction toys. Other ways to encourage writing skills in boys include painting or drawing at easels (which some boys may find easier than sitting still at a desk or table), typing (either on the computer or a real typewriter) and clipboarding (walking around tallying or charting objects in the environment).

FOCUS ON FEELINGS

Males of all ages tend to be less accurate at identifying emotions, both in themselves and in others. Parents and other care-givers can help boys give voice to their feelings from a young age, distinguishing happiness, sadness, anger, fear, disappointment, jealousy, embarrassment and shame. By nurturing the habit and vocabulary of emotional expression, parents can give boys a verbal outlet for their feelings and promote the empathy skills that tend to come a little less easily to them.

GET A PET

This is a great way to teach young boys nurturing skills. If a dog or cat is too much for you to handle, smaller pets, like goldfish, lizards or gerbils, are a great place to start. Most kids crave the chance to own their own animals. Taking responsibility for the family pet is a wonderful way to cultivate a boy's sensitive, caring side.

was getting enraged when her son was losing the ball to the girl. 'Don't get beat by a girl,' she was shouting to him, her little daughter standing right next to her. I said: 'Come on, what does being a girl have to do with it?'"

Arriving at her daughter's high school, we find her sitting outside on the steps. Slim and stunning with huge eyes, long blonde hair tied back into a ponytail, tight jeans and silver flip-flops, she is friendly and chatty. Later, we pick up Eliot's younger son, Toby, who has just finished band practice. Wearing navy sports gear, he slides into the back of the car and offers no information about his day. I ask him what instrument he plays: "Trumpet," he says – and that is his only word on the journey home. From the little I see, they seem to divide down fairly gender-stereotypical lines.

"I started out," Eliot continues, "writing a book about the differences between the brains of boys and girls. We all knew they were different, it was just a matter of telling a curious parent why they were different. But the evidence just wasn't there. To make a statement such as, 'Girls are more social than boys', which I believed, I had to pick out the papers and, yes, there are a few papers that showed that – but many more that didn't. I just realised that I can't say boys and girls are fundamentally different. So I actually went back and rewrote my early chapters."

As a result, she has a book that is much more "socially relevant". Not to mention controversial. "Everything is filtered through a lens of whether you believe boys and girls are hard-wired. I don't think your average person appreciates that differences in the brain can be learnt." Not, she says, that she is trying to make parents feel guilty; she just wants them to be more aware of the malleability of their children's brains and their enormous potential. "I don't want to be accused of saying it's all environment and it's all parents, I just want to right the ship. As a mother of both a daughter and sons, I believe we've got to find a better balance."

As we drive back to her house, we pass two girls, one dressed in pink on a purple bike, the other in purple on a pink bike. I ask her whether she feels that the colour/gender coding is so entrenched that it is unshakable. "No, I see positive signs. If you look at some college campuses, you see kids dressing in ways that show they do not want to be identified as male or female and that is a huge revolution."

But shouldn't we also celebrate the differences between boys and girls? Do we really want a homogenous sea of boy-girls and girl-boys? "I think we should celebrate diversity and appreciate that boys and girls are different in some ways; but it's not categorical. The danger of celebrating the differences is pigeonholing. Ultimately, we're limiting ourselves and we're limiting our kids." ■



GIRLS *How to break female stereotypes*

DON'T IGNORE YOUR DAUGHTER

Girls can sometimes be too easy. Quiet, complacent babies may not get as much attention as fussier types, and they may actually suffer from a lack of the stimulation and interaction needed to fully develop their motor and cognitive skills.

While there are plenty of exceptions, girls fall into this category more often than boys. So here is another way that close physical contact can pay off: by keeping your baby nearby, you are more likely to interact more. These issues are every bit as important – if not more so – for babies in childcare. When one care-giver is responsible for several infants, the temptation to stereotype and respond to boys and girls in a one-size-fits-all way may be especially high.

KEEP AN OPEN MIND

This applies to children of all ages, but no age is too young to begin revising expectations for our children. Just because your child is a girl doesn't mean she won't be interested in trucks and trains and rolling a ball across the living room floor with you. Just because your child is a boy doesn't mean he won't be scared of going down the slide or doesn't need lots of cuddling and nurturing.

TAKE RISKS

Because of baby girls' smaller size, and possibly because of lingering stereotypes, parents tend to be more cautious with infant girls, permitting them less freedom to explore and to push their physical limits. But later on, girls begin falling behind boys in their physicality and spatial skills, and it's clear that girls could benefit from greater physical challenges and earlier opportunities to explore. The fewer no's your daughter hears, the more she will be inspired to follow her own natural curiosity. Girls need liberating.

ENCOURAGE PHYSICAL PLAY

Movement stimulates the brain's vestibular system, the inner-ear sense that detects a body's motion and position with respect to gravity. There is some evidence that vestibular stimulation – spinning, swinging, jumping, cartwheeling – enhances reflexes and gross motor development. Although girls do not lag behind boys in gross motor skills during the first year, they are slower and weaker from the preschool years onward. The benefits

of vestibular stimulation are well enough proven to justify extra movement experience for young girls.

PLAY BALL

Girls begin falling behind boys in certain spatial skills by the end of the preschool period. One theory is that boys' greater movement and experience with projectiles – balls, darts, perceive three-dimensional moving objects, a sex difference that continues to grow throughout childhood. Girls' spatial skills may therefore benefit from more movement and practice at ball games, targeting, and other hand-eye challenges.

BUY DIFFERENT TOYS

Many girls love building toys but they are often not marketed to appeal to them. Most of the themes (for example, *Star Wars*) and colours (black, yellow, grey, beige and army-fatigue green) are created with only boys in mind.

Whatever the choice, playing with building toys and, specifically, translating a series of instructional diagrams into a three-dimensional structure provide excellent practice at the kind of visuospatial skill that is linked to higher mathematic achievement.

PLAY COMPUTER GAMES

Guess what: video games are actually good for something. Several studies have now found that computer games involving spatial manipulation improve children's ability to mentally visualise and rotate objects. Most of the studies have been done with older children and adolescents, and the gains are similar for both boys and girls. Considering, however, that this kind of spatial ability shows the largest sex difference of any cognitive skill, girls may especially benefit from being encouraged to play spatially orientated computer games from a young age, particularly those depicting three-dimensional objects or virtual navigation.

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