



Basic Biology

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Holly Lyne looks critically at the perception that women are losing the ability to birth

I'm not a science person. I was never that interested in it at school. I don't think like a scientist, or at least I don't think I do. I was always much more interested in the arts and I still am. But I like science, I think science is important and I've picked up a few scientific facts throughout my life that have enhanced my understanding of the world.

Birth both is and isn't a topic for science. It is a normal biological function and can in some ways be studied, categorised and understood in basic scientific terms. But it is also unpredictable and a deeply emotional time for women and their families and so we cannot view it in a cold, sterile, scientific vacuum.

Here are a couple of very basic scientific facts that I think are important in understanding a little bit about human procreation.

First of all: genetics. I'm no expert, but I understand, basically, how genetics work. Everyone has genes and when a baby is conceived it has a mix of 50% maternal genes and 50% paternal. Each new baby gets half its genes from its mum and half from its dad.

Certain medical conditions are hereditary, passed down through the genetic code into each new generation. They can come from either the mother or the father.

Linked to this is evolution, an incredibly slow process that fundamentally weeds out the weak, and only the strongest traits survive. The more advanced our medical science becomes, the more we can circumvent this aspect of evolution, because those with traits of weakness are more and more often saved by science, and are therefore able to pass along their weak traits to the next generation.

Surely hereditary traits which make procreating impossible, for instance, a pelvis too small to successfully birth a baby, can't be passed on. Until the very recent rise of obstetric intervention in birth, if a woman grew a baby too big for her to give birth to then one or both of them would die in the process of birth, thereby rendering it almost impossible for the trait to make its way into the next generation.

(Remember how I mentioned that evolution was a slow process? Well, I'll be coming back to that again in a minute.)

Secondly: hormones. Hormones are absolutely central to almost every aspect of human behaviour. They govern our sex drive, our temper, the female menstrual cycle, and pregnancy and birth. Never underestimate just how important these hormones are. Without the right levels of oestrogen and

progesterone, it would be impossible for us to ever conceive. Without oxytocin we wouldn't be able to give birth to or feed our babies the food they have evolved to need (breast milk). Without adrenaline we wouldn't be able to fight (or flee) to defend our children against predators.

These hormones govern our entire existence. Oxytocin burns through a woman's system quite quickly, it enters the system only under the right conditions and can dissipate within seconds if adrenaline is introduced. Adrenaline gets us ready to defend ourselves either through fight or flight. It sends blood pumping to the lungs and limbs in preparation for physical activity and it takes a very long time to leave the system. During labour, if adrenaline is released, labour will often stall, because our hormones are telling our muscles that it is not safe to give birth. Blood is pumped away from the uterus, halting contractions and allowing the baby to sit tight until the mother is once again safe.

So, these are the two basic elements of biology that are important in understanding how women give birth.

I once encountered a woman on a forum, who was absolutely adamant that she, her sister and her mother were all incapable of experiencing strong enough contractions to facilitate birth. They all needed help from an obstetrician in order to birth their babies: their bodies simply weren't up to the task. She seemed to be implying that this was a hereditary condition. I never really got into a proper, adult discussion with her about it, because she was so defensive that it was hard to have a meaningful dialogue. But what I really wish I'd been able to ask her is how did her grandmother give birth?

Synthetic oxytocin (syntocinon) is a drug given to women to increase the frequency and intensity of their contractions. It is used both to induce labour and accelerate it if deemed too slow and has only existed for a few decades. Prior to this, oxytocin did a perfectly good job of facilitating birth in the vast majority of cases. How do I know this? Because even 50 years ago the human population of the planet was more than our natural resources could comfortably sustain. We have been an incredibly successful species, in evolutionary terms.

I'm not denying that there have been deaths in childbirth, of course there have, and there are a great deal fewer deaths today in this part of the world thanks to basic hygiene and sanitation improving and the availability of world-class midwives and obstetric help when necessary.

But from an evolutionary perspective it is pretty obvious that reproduction has been very successful.

If this woman was right and her maternal genetics were compromised, making it virtually impossible to give birth without synthetic oxytocin, where did the trait come from? How was it passed down? What did her grandmother, and every woman in her family before her, do to enable the healthy birth of any babies? My point is, of course, that this woman did not have a hereditary defect.

I dare say her mother was just like the vast majority of her generation, directed into hospital to give birth, away from the comfort and safety of her nest (home) and forced to labour on her back, routine enema on arrival etc. etc. ad nauseam. It's an old story, the theft of birth from women and given into the hands of

medical men and their marvellous machines. Adrenaline takes over because the woman is afraid and has no strong female support, oxytocin production halts and, yes, the syntonin is plugged into her vein in order to get labour going again. It has been happening for at least two generations to huge numbers of women, it happened to me (not the routine enema, I hasten to add) and it is my very strong suspicion that this is exactly what happened to this woman and her family members.

On 16 April 2011, Amelia Hill's article in the Guardian about home birth left me unable to sleep due to the extreme rage running through me (thank you, adrenaline). Philip Steer, a professor in obstetrics and gynaecology at Imperial College London, made some remarks that fly in the face of every sensible lesson in biology and the journalist did nothing to counter his absurd assertions.

He implied that up to 75% of women were unable to give birth normally. He claimed that 50% of women develop a problem during pregnancy that renders them high risk. Now, I happen to know that approximately 50% of women are booked under a consultant during pregnancy, but this can be for reasons including a history of depression, slightly elevated BMI or a previous c-section. None of which automatically means she is in need of obstetric care during pregnancy or birth.

Steer went on to claim that of the remaining 50%, 50% would develop a problem during birth requiring the attention of an obstetrician. That brings the total to 75%. I'd like to point out at this juncture that the national normal birth rate is over 40%, normal birth as defined by the NCT. So of his 75% 'requiring' obstetric aid, some at least are still actually having a normal birth, a fact he seems to be claiming is impossible. I happen to believe that far more than 40% could be having a normal birth if they were supported properly. Currently in the UK, around 10% of births are by avoidable caesarean section (the WHO suggests that a c-section rate in excess of 10-15% does not improve outcomes; our country performs this surgery in more than 25% of all births; therefore at least 10% of births are by unnecessary caesarean), so that's potentially up to a further 10% having a normal birth, never mind the rest, but more on that later. Professor Steer claims that we have actually evolved to be unable to give birth to our own babies, stating that the pelvis has shrunk and the skull has enlarged over the last 500,000 years. This is an extreme over-simplification of the facts designed purely to defend his profession. He ignores the fact that the pelvis expands during pregnancy and birth and that the skull plates of a baby in utero and after birth are not fused and can overlap one another. These facts facilitate a smooth birth for the vast majority of birthing dyads.

If a woman remains upright and mobile during birth and especially during the second stage (pushing) then her pelvis can expand by up to 30%!

Remember my point about evolution being slow? Well, it is. It is practically impossible to see large-scale results over just a few generations. Modern obstetrics is just that, modern. Synthetic oxytocin was invented in 1953. Caesarean sections have been around for more than a thousand years, but as recently as 1865, the mortality rate was 85%. It is really only in recent decades that birth surgery has become a common procedure that most mothers and babies survive.

So one cannot even begin to claim that modern obstetric interventions are already saving enough lives to have fundamentally impacted on hereditary traits (i.e. made it possible to override hereditary weaknesses sufficiently to render 75% of women incapable of giving birth without intervention).

Steer also fails to acknowledge the harm done by many interventions when they are routine, rather than for true necessity. By 'playing it safe', we are so severely interfering with a pretty effective natural process that we are actually creating problems where they need not exist. Adrenaline is ruining perfectly normal births. Making women lie down, hooked up to monitors that are known to increase the chances of a caesarean without improving outcomes, routine induction of labour with synthetic oxytocin and the widespread use of epidural anaesthesia are all making it harder for women to give birth.

I'm not saying that there isn't a place for hospital birth or that obstetricians don't save lives. If a woman feels safest in hospital then that is where she should be. If a woman or her baby has a serious problem that requires the help of an obstetrician then one should be on hand to help if needed.

But for Steer to claim that most women need people like him flies in the face of very basic biology and his comments will echo in the minds of countless readers of the Guardian, probably for years to come. I hope that this article will, to some small extent, undo some of that damage.