

Genetic Engineering Could Prevent the UK from Aging Like Japan

Retrieved Monday 14th of August 2017 05:55:54 PM

At *Exponential Investor*, we are keen to spot the trends which will change the world. This week, we'll be looking at Biotech Breakthroughs. These will bring astounding benefits, in coming decades.

You need to watch them for your own health, and that of your wallet.

We like to be a of the game – and we've previously covered many of these trends. Where relevant, we've linked each story to our earlier, in-depth coverage.

We'll start off at the beginning – of life!

Fertility

A combination of contraception, women's education, and misplaced confidence in reproductive technology has led to a dramatic reduction in the fertility rates of women in developed nations. This has led to great pressure to extend women's fertile years. The fact that some firms are now offering egg freezing to female staff is just one sign of this shift.

A huge breakthrough is now on the horizon, and technology may soon overcome menopause. Various techniques appear promising. One approach could be to stimulate the to make new eggs. This has been reported as a side-effect of certain drugs – but much work still remains to be done, before this effect can be used therapeutically.

If drugs aren't your bag, there's a therapy called ovarian rejuvenation. This involves separating the 's own blood into individual blood products. Platelet-rich plasma is then injected into the ovaries – apparently kick-starting them. This also has some HRT-like effects on the – giving women a welcome second flush of youth. We imagined the widespread use of similar techniques in our "[Day in 2050](#)" series.

A further alternative is the potential for widespread adoption of ovarian tissue removal, freezing and re-implantation. If schoolgirls were offered egg freezing as routinely as they are vaccinated, it would give them the opportunity to vastly extend their reproductive years.

In coming decades, we might find that the average age for first-time motherhood is actually beyond the natural onset of the menopause. We'd therefore become a society of "grandparents" – with fifty-something women routinely seen on the school run. That would save the UK from a fate like Japan – where an ageing population is proving very difficult to economically support.

Check out our previous coverage on [fertility](#).

Designer babies

We are used to children being born with a random assortment of genes. One of your children may be bright, and the other one beautiful. However, what if you could choose only to have bright *and* beautiful children? It's a choice that many parents would find tempting. Screening out unappealing genes may become an increasingly normal part of parenthood.

You might find this worrying – but the temptation to screen can turn to desperation, if one parent carries a dangerous genetic disease. Who'd oppose such life-saving treatment?

However, there is a "slippery slope", with this type of intervention. We might move between avoiding recognised genetic disorders (eg, Huntington's), to reducing risks of serious illnesses (eg, stroke). We might then find parents blithely de-selecting traits they may find undesirable – such as homosexuality, or ginger hair. In time, it's easy to imagine a repressive, conservative regime coercing parents into having children who were placid, obedient, and straight. Plenty of countries around the world already brutally repress human rights – so it's not such a big step.

Alternatively, we could also imagine a relatively benign future – where designer babies are used to reverse the effects of a modern environment on human evolution. Essentially all children now survive into adulthood. By contrast, only a couple of

hundred years ago, a large minority of them died. We've seen the near-elimination of infant mortality, as an evolutionary force. Even very sick children are now growing up, to pass on their genes. One stark example of this is the elevated infertility rates, among children of parents who have themselves had infertility treatment.

Personally, I owe my life to antibiotics for recurrent childhood ear infections – a condition which almost killed my grandfather. Any children I have may therefore inherit my seemingly increased risk. I'd be delighted if genetic engineering was an alternative to childlessness, if I wanted to avoid passing on the vulnerability.

One particularly troubling effect of modern life on the human genome is potential selective pressure for lower intelligence. This is caused by various factors – but notably by a relative paucity of children born to graduates. Those who are capable of completing university often end up with fewer children, as they prioritise their careers over starting a family; age of first birth is a very strong indicator of ultimate family size. Without specific policy or genetic intervention, we'll likely experience negative selection pressure for the characteristics necessary to graduate: intelligence, self-discipline, and forward planning. That would, in my view, be a very bad thing indeed. Are “designer babies” a way out of that funk?

Check out our previous coverage of [germ-line genetic engineering](#).

Your feedback is welcome – so please do write in: andrew@southbankresearch.com.

Best,

Andrew Lockley
Exponential Investor