

Unique from the start: the development of a new human life

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A lot of people get the impression that going to a top secular university inevitably makes one more 'progressive'. It is supposed to be a chance to grow out of traditional views and open one's mind to enlightened, scientific, evidence-based ideas; to be a liberal and a revolutionary, fighting for marginalised groups.

In reality, there is much more nuance to it than this, but in this particular case it is true. When I went up to Oxford, I – like most people – disagreed strongly with late term abortion. But I was not pro-life; I had bought into the traditional view in my country that *we do not know* when life begins, and that *we do not know* when a new human being is created. But it was precisely *because* I studied Medicine (and Medical Ethics) and opened my eyes to the scientific evidence that I became pro-life. It was *because* of my passion for the marginalised that I realised the urgency of this cause: because in many countries we have failed mothers and their unborn children, so that the most dangerous place for a child to be is in their first home, their mother's womb.

Human rights are no less important today than they were in the 20th century. They are a way of protecting the marginalised, upholding their most fundamental rights no matter how weak or vulnerable they are. In the words of a leading progressive human rights campaigner, they 'empower the vulnerable' and 'irritate and inconvenience the mighty'.¹ International human rights law is clear that they apply to *every human being*.² The Convention on the Rights of the Child even explicitly says that 'children' need 'appropriate legal protection, *before as well as after birth*'.³

One of the things that convinced me most is realising that on a scientific level, there is no debate about when life begins. Here I was, at the top medical school in the world, and in an overwhelmingly pro-choice environment, and yet no one even *thought* to debate 'when life begins'. It was simply taken for granted, as it is across the scientific community: life begins at fertilisation.⁴ This is the standard view you will find in embryology textbooks and departments all over the world. It is not up for debate. A recent survey of thousands of biologists all over the world found that 95% affirmed this view: including over 90% of those who called themselves atheists and pro-choice.⁵

If unborn babies are not living, talk of them dying would be nonsensical. But it is commonplace within medical literature. The prestigious Cochrane Library defines miscarriage as 'the spontaneous death and/or expulsion of an embryo or fetus from the uterus before it is able to survive on its own'.⁶ The National Institute for Clinical Excellence, the leading clinical guidance body in the UK, says that

¹ Chakrabarti, S (2015). *On Liberty*. London: Penguin.

² International Covenant on Civil and Political Rights, Article 6.

³ Convention on the Rights of the Child, Preamble.

⁴ Usually! Some lives start by twinning, where an early human being splits into two a few days after fertilisation.

⁵ Jacobs, SA (2018). 'Biologists' consensus on 'when life begins',' available online at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3211703. There is some reason to think a significant proportion of the remaining 4-5% gave the wrong answer for ideological reasons. The author of the study received a number of abusive e-mails from his survey participants indicating that they would not be participating properly; see Jacobs, S (2019). 'I asked thousands of biologists when life begins. The answer wasn't popular,' available online at <https://quilllette.com/2019/10/16/i-asked-thousands-of-biologists-when-life-begins-the-answer-wasnt-popular/>.

⁶ Cochrane Library (2019). 'Medical treatment for early fetal death (less than 24 weeks),' available online at https://www.cochrane.org/CD002253/PREG_medical-treatment-early-fetal-death-less-24-weeks/.

‘Intrauterine fetal death is when an unborn baby (fetus) dies inside the womb before birth’.⁷ The Royal College of Obstetricians and Gynaecologists write that ‘Intrauterine fetal death refers to babies with no signs of life in utero’ – presumably in contrast to ‘babies’ who do show signs of life in utero.⁸ Elsewhere, regarding a particular method of late abortion, they say that ‘failure to perform feticide could result in a live birth and survival, which contradicts the intention of the abortion’.⁹ Ann Furedi, until recently the CEO of the UK’s leading private abortion provider, defines abortion as ‘the intentional destruction of the fetus in the womb, or any untimely delivery brought about with intent to cause the death of the fetus’.¹⁰

It helps to have a clear understanding of what it means to say that ‘life begins at fertilisation/conception’. After all, isn’t a skin cell technically living? And aren’t the sperm and egg cell that made the baby living? Indeed, they are. Skin cells, egg cells and bacteria are alive, but do not have a right to life. So why do embryos and fetuses?

To answer this question, we just have to think about what *we* are. *We* have a right to life because we are individual human beings. And human beings are living organisms of the species *Homo sapiens*. So the important question is not just, are fetuses living? Rather, the question is, are they new, individual human organisms? Skin cells, egg cells and bacteria are not. But embryos and fetuses – in other words, unborn babies – are.

I have sometimes been challenged on my ‘unscientific’ use of the word ‘baby’. But most of my colleagues within Medicine are bewildered by this objection. ‘Of course it’s a baby!’ None of us have any hesitation about calling her a baby when she is wanted. The National Health Service calls the unborn child a ‘baby’ from the first few weeks of pregnancy.¹¹ The Oxford Handbook of Obstetrics and Gynaecology openly calls her an unborn child and a baby.¹² A recent study in one of the leading Midwifery journals concluded that “Midwifery scholarship, global midwifery professional bodies position statements and practice codes mostly employ the word ‘baby’ instead of ‘fetus’.”¹³

The difference between ‘fetus’ and ‘baby/child’ here is not between ‘scientific’ and ‘unscientific’ terms, or between accurate and inaccurate terms. It is simply the difference between technical and non-technical terms. Doctors use non-technical terms accurately all the time: when we call a myocardial infarction a ‘heart attack’, for example, or when we call an axilla an ‘armpit’. It is perfectly accurate to call the child in the womb a baby or a child. Indeed, the word ‘fetus’ in Latin just means ‘offspring’ and can also refer to infants outside the womb.

Since the legalisation of abortion in much of the Western world, we know far more about the development of the child in the womb, from the amazing facts published in scientific journals to graphic depictions through 3D and now even 4D ultrasound.

⁷ National Institute for Clinical Excellence (2013). ‘Misoprostol for induction of labour after the late death of an unborn baby in the womb’, available online at <https://www.nice.org.uk/advice/esuom11/resources/misoprostol-for-induction-of-labour-after-the-late-death-of-an-unborn-baby-in-the-womb-pdf-17427650245>.

⁸ Royal College of Obstetricians and Gynaecologists (2010). ‘Late intrauterine fetal death and still birth,’ available online at https://www.rcog.org.uk/globalassets/documents/guidelines/gtg_55.pdf.

⁹ Royal College of Obstetricians and Gynaecologists (2011). ‘The care of women requesting induced abortion,’ available online at https://www.rcog.org.uk/globalassets/documents/guidelines/abortion-guideline_web_1.pdf.

¹⁰ Furedi, A (2016). *The moral case for abortion*. London: Palgrave Macmillan.

¹¹ National Health Service (2018). ‘You and your baby at 4 weeks pregnant,’ available online at <https://www.nhs.uk/pregnancy/week-by-week/1-to-12/4-weeks/>.

¹² Collins, S et al. (eds.) (2013). *Oxford Handbook of Obstetrics and Gynaecology*, 3rd ed. Oxford: Oxford University Press.

¹³ Anolak, H et al. (2019). ‘What’s wrong with using the F word? A systematic integrative review of how the fetus is talked about in situations of fetal demise or high risk of fetal loss,’ *Midwifery*, 79: 102537.

What is particularly striking is how our understanding of a baby's development changes over time: babies develop and mature far quicker than we used to think. Every year, new evidence of the unborn child's humanity and development emerges. Textbooks and more have been written on the development of a human being in the womb.¹⁴ It's worth recapping just some of the most impressive facts:¹⁵

- 1) While the standard view is that the first heartbeat of the baby is at just 22 days after fertilisation,¹⁶ a team from the University of Oxford has unveiled new research suggesting it may be as early as 16 days after fertilisation.¹⁷ Either way, it is very early, and well before the large majority of abortions. The heart will beat 1 million times by the end of the 4th week, and around 54 million times by the end of pregnancy.¹⁸
- 2) The baby has its first noticeable movements from just 4-5 weeks after fertilisation,^{19,20} moving away from a stimulus touching them at 5-6 weeks.²¹ They show a startle response by 6 weeks²² and hiccupping, sucking and swallowing by 7 weeks.²³ Breathing-type movements begin at 8 weeks, and yawning at 9 weeks.²⁴
- 3) The telencephalon – eventually the most developed part of the brain – can be distinguished at just 4 weeks,²⁵ and grows rapidly. By 5 weeks, 'The brain is growing rapidly and this results in the head growing faster than the rest of the body. The embryo has a large forehead, and the eyes and ears continue to develop.'²⁶ The brain grows much faster than the rest of the body, being 43% of the entire body weight by just 8 weeks.²⁷ By 11 weeks, the forebrain alone has 3 billion neurons.²⁸
- 4) From just 43 days (6 weeks), brain waves are detectable from an unborn baby's brain. The baby who was studied was taken from an ectopic pregnancy and was able to survive for 90 minutes in just a salt solution, even at this early age.²⁹

¹⁴ A very helpful and fully referenced database on fetal development is available at the Endowment for Human Development: <https://www.ehd.org/>.

¹⁵ Since gestational age is measured from the last menstrual period, which is about 2 weeks before fertilisation, there is sometimes a 2 weeks discrepancy between the facts here and the sources – this is because the sources are using gestational age, whereas I am giving the actual age of the child from fertilisation.

¹⁶ Tan, CMJ and Lewandowski, AJ (2020). 'The transitional heart: from early embryonic and fetal development to neonatal life,' *Fetal Diagnosis and Therapy*, 47: 373-386.

¹⁷ University of Oxford (2016). 'First of our three billion heartbeats is sooner than we thought,' available online at <https://www.ox.ac.uk/news/2016-10-11-first-our-three-billion-heartbeats-sooner-we-thought>.

¹⁸ Endowment for Human Development (2021). 'The beat goes on – tracking the total number of heart beats during pregnancy and beyond,' available online at www.ehd.org/dev_article_appendix.php.

¹⁹ Fagard, J et al. (2018). 'Fetal origin of sensorimotor behavior,' *Frontiers in Neurobotics*, 12: 23.

²⁰ O'Rahilly, R and Muller, F (2008). 'Significant features in the early prenatal development of the human brain,' *Annals of Anatomy*, 190: 105-118.

²¹ Fagard (2018).

²² Fagard (2018).

²³ de Vries, JIP and Fong, BF (2006). 'Normal fetal motility: an overview,' *Ultrasound in Obstetrics & Gynecology*, 27: 701-711.

²⁴ de Vries, JIP and Fong, BF (2006). 'Normal fetal motility: an overview,' *Ultrasound in Obstetrics & Gynecology*, 27: 701-711.

²⁵ O'Rahilly and Muller (2008).

²⁶ National Health Service (2018). 'You and your baby at 7 weeks pregnant,' available online at <https://www.nhs.uk/pregnancy/week-by-week/1-to-12/7-weeks/>.

²⁷ Jordaan, HVF (1979). 'Development of the central nervous system in prenatal life,' *Obstetrics & Gynecology*, 53: 146-150.

²⁸ Samuelsen, GB et al. (2003). 'The changing number of cells in the human fetal forebrain and its subdivisions: a stereological analysis,' *Cerebral Cortex*, 13: 115-122.

²⁹ Borkowski, WJ and Bernstine, RL (1955). 'Electroencephalography of the fetus,' *Neurology*, 5: 362-365.

- 5) At just 7 weeks post-fertilisation, ‘The eyes are bigger and more obvious, and have some colour (pigment) in them. There’s a mouth and a tongue with tiny taste buds.

The hands and feet are developing – ridges identify where the fingers and toes will be, although they have not separated out yet.

The major internal organs, such as the heart, brain, lungs, kidneys and gut, continue developing.’³⁰

By 8 weeks post-fertilisation, ‘more than 90% of the 5000 named structures of the body have appeared.’³¹

- 6) The latest research suggests babies can feel pain at just 10 weeks,³² though some scholars think even earlier.³³
- 7) Babies demonstrate social interaction from 12 weeks: an ultrasound study on twins found that they deliberately reached towards each other and even took special care around each other’s eyes.³⁴ From 9-11 weeks, they react strongly to being touched or pushed by the other twin – or even earlier for twins sharing a placenta.³⁵
- 8) Recent research suggests that babies can hear and respond as early as 14 weeks after fertilisation, moving their mouth and tongue in response to music.³⁶
- 9) Unborn babies can respond to taste at 15-16 weeks,³⁷ and later in pregnancy can remember the taste of foods, eating more of those foods after birth.³⁸
- 10) Babies begin to learn songs, poetic rhythms and language^{39,40} while in the womb – one study found that newborn babies could recognise *The Cat in the Hat* after hearing it repeatedly in the womb.⁴¹ Another found that newborn babies settled when hearing a soap opera theme tune they had heard in the womb,⁴² and they can even detect ‘wrong’ notes in songs.⁴³ One study found that French and German babies even cry in ‘French’ and ‘German’ ways according to the

³⁰ National Health Service (2018). ‘You and your baby at 9 weeks pregnant,’ available online at <https://www.nhs.uk/pregnancy/week-by-week/1-to-12/9-weeks/>.

³¹ O’Rahilly and Muller (2008).

³² Derbyshire, SWG and Bockmann, JC (2020). ‘Reconsidering fetal pain,’ *Journal of Medical Ethics*, 46: 3-6.

³³ All Party Parliamentary Pro-Life Group (2020). ‘Foetal sentience & pain,’ available online at <https://lordalton.files.wordpress.com/2020/03/2020-pro-life-appg-report-on-foetal-pain.pdf>.

³⁴ Castiello, U et al. (2010). ‘Wired to be social: the ontogeny of human interaction,’ *PLoS One*, 5: e13199.

³⁵ Fagard (2018).

³⁶ López-Teijón, M et al. (2015). ‘Fetal facial expression in response to intravaginal music emission,’ *Ultrasound*, 23: 216-223.

³⁷ Liley, AW (1972). ‘The fetus as a personality,’ *Australian & New Zealand Journal of Psychiatry*, 6: 99.

³⁸ Mennella, JA et al. (2001). ‘Prenatal and postnatal flavor learning by human infants,’ *Pediatrics*, 107: E88.

³⁹ Moon, C et al. (2012). ‘Language experienced *in utero* affects vowel perception after birth: a two-country study,’ *Acta Paediatrica*, 102: 156-160.

⁴⁰ Partanen, E et al. (2013). ‘Learning-induced neural plasticity of speech processing before birth,’ *Proceedings of the National Academy of Sciences*, 110: 15145-15150.

⁴¹ DeCasper, A and Spence, MJ (1986). ‘Prenatal maternal speech influences newborns’ perception of speech sounds,’ *Infant Behavior and Development*, 9: 133-150.

⁴² Hepper, PG (1988). ‘Fetal “soap” addiction,’ *The Lancet*, 331: 1347-1348.

⁴³ Partanen, E et al. (2013). ‘Prenatal music exposure induces long-term neural effects,’ *PLoS One*, 8: e78946.

language/accents they heard in the womb.⁴⁴ They remember their mother's voice in the womb^{45,46} and recognise their own language in the womb over foreign languages.⁴⁷

- 11) From 24 weeks, babies' capacity for facial expressions gradually increases.⁴⁸ They appear to be able to cry in the womb in the late second and third trimester.⁴⁹
- 12) In the third trimester, babies can track visual stimuli⁵⁰ and seem to preferentially notice face-like patterns.⁵¹
- 13) Perhaps most remarkably of all, babies produce unborn stem cells which migrate around their mother's body helping to heal damaged organs, as early as 2-3 weeks after fertilisation.⁵² These cells have been able to repair heart damage, among other organs.⁵³ They appear to play a role in preventing cancer, especially breast cancer – this may be part of the reason women having children are at lower risk of breast cancer.⁵⁴ Women with more fetal cells have a lower risk of death from cancer.⁵⁵ In mouse models these cells have been shown to repair the brain after a stroke.⁵⁶ Other studies have shown these cells becoming neurons – likely affecting the mother's thought – in other conditions. They integrated within the brain in a mouse model of Parkinson's Disease.⁵⁷ A low level of fetal cells is associated with an increased risk of Alzheimer's Disease.⁵⁸ In one study, 'fetal cells from her terminated fetus repopulated the liver of a woman with hepatitis C.'⁵⁹ The ratios of fetal cells in maternal organs are at times similar to those seen in stem cell transplants.⁶⁰ These cells can last for decades.⁶¹ One leading scholar concludes: 'after the mother spends 9 months providing nutrients and an environment for optimal growth and development of the baby, the baby gives back cells with regenerative potential to the mother... it is the mother who benefits'.⁶²
- 14) In light of this, it is amazing that some pro-abortion writers have tried to portray the unborn child as a 'parasite'. In fact, women continuing pregnancies have the lowest mortality risk of

⁴⁴ Mampe, B et al. (2009). 'Newborns' cry melody is shaped by their native language,' *Current Biology*, 19: 1994-1997.

⁴⁵ DeCasper, AJ and Fifer, WP (1980). 'Of human bonding: newborns prefer their mother's voices,' *Science*, 208: 1174-1176.

⁴⁶ Kisilevsky, BS and Hains, SMJ (2011). 'Onset and maturation of fetal heart rate response to the mother's voice over late gestation,' *Developmental Science*, 14: 214-223.

⁴⁷ Fifer, WP and Moon, CM (1994). 'The role of mother's voice in the organization of brain function in the newborn,' *Acta Paediatrica*, s397: 86-93.

⁴⁸ Reissland, N et al. (2013). 'Can healthy fetuses show facial expressions of "pain" or "distress"?' *PLoS One*, 8: e65530.

⁴⁹ Gingras, JL et al. (2005). 'Fetal homologue of infant crying,' *Archives of Disease in Childhood – Fetal and Neonatal edition*, 90: F415-F418.

⁵⁰ Donovan, T et al. (2020). 'Fetal eye movements in response to a visual stimulus,' *Brain Behavior*, 10: e01676.

⁵¹ Reid, VM et al. (2017). 'The human fetus preferentially engages with face-like visual stimuli,' *Current Biology*, 27: 1825-1828.

⁵² Fjeldstad, HES et al. (2020). 'Fetal microchimerism and implications for maternal health,' *Obstetric Medicine*, 13: 112-119.

⁵³ Fjeldstad (2020).

⁵⁴ Fjeldstad (2020).

⁵⁵ Fjeldstad (2020).

⁵⁶ Fjeldstad (2020).

⁵⁷ Pritchard, S and Bianchi, DW (2012). 'Fetal cell microchimerism in the maternal heart: baby gives back,' *Circulation Research*, 110: 3-5.

⁵⁸ Chan, WFN et al. (2012). 'Male microchimerism in the human female brain,' *PLoS One*, 7: e45592.

⁵⁹ Bianchi, DW and Fisk, NM (2007). 'Fetomaternal cell trafficking and the stem cell debate: gender matters,' *JAMA*, 297: 1489-1491.

⁶⁰ Bianchi and Fisk (2007).

⁶¹ Pritchard and Bianchi (2012).

⁶² Pritchard and Bianchi (2012).

all women (a 70% reduction compared to abortion and a 56% reduction compared to not being pregnant),⁶³ primarily because pregnancy and looking after young children are two of the strongest protective factors against suicide.

It's important to be clear here that, for example, having a heartbeat does not *make* the unborn child human. No one is – or should – argue that any of these particular features are the defining feature of humans. A human being exists before all of these developments take place. But these developments are a *reflection* and *expression* of the fact that a human being already exists – they are evidence of that human being coming to maturity. This is, on reflection, no different to the development of a human child after birth. They are not fully developed – but they are still a human being. When they acquire a new biological feature or ability, they do not *become* a human being. Rather, they simply mature and develop in the way that existing human beings normally do. The same is true of the very young embryo or fetus. They are a developing human being in the same way that as a 5 year old child is. In fact, the brain is not fully mature until age 25.⁶⁴ If they are subhuman because they are not fully developed (though they develop very quickly), then so are all children and young adults.

Long before doctors knew all of this, the Hippocratic Oath forbade abortion. Now that science has shown us the reality of unborn life, abortion is impossible to justify. Unborn children are human beings: and all human beings are equal. The pro-life position is not just pro-life and pro-woman: it is also pro-science.

⁶³ Karalis, E et al. (2017). 'Decreasing mortality during pregnancy and for a year after while mortality after termination of pregnancy remains high: a population-based register study of pregnancy-associated deaths in Finland 2001-2012,' *British Journal of Obstetrics and Gynaecology*, 124: 1115-1121.

⁶⁴ Arain, M et al. (2013). 'Maturation of the adolescent brain,' *Neuropsychiatric Disease and Treatment*, 9: 449-461.