A Christian perspective on issues in early life ethics and family planning

Revised Edition

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CONTENTS

1. INTRODUCTION: The urgency of the issues

1.1 A hot topic!

The first version of this paper was produced for an event in February 2012. In the weeks leading up to the event I was on the lookout for news headlines related to issues surrounding early life ethics and family planning. I was not disappointed! Just consider the following headlines and the questions they raise:

Premature baby survives after doctors advised abortion **(Telegraph 25th July 2011)** [1]

Is there not an inherent contradiction between the level of support given to premature babies and the fact that other babies are aborted at the same stage of pregnancy?

19 Kids and Counting becomes 20: Duggar parents announce they are expecting another child **(Daily Mail, 9th November 2011)** [2]

Are these Christian parents correct in their policy of continuing to have as many children as possible, rejecting all forms of family planning?

Morning-after pill free over festive season by post **(BBC, 6th December 2011)** [3]

What is the morning after pill and how does it work? Is it contraception or early abortion?

Kent iPhone App aims to improve teen sexual health **(BBC, 16th January 2012)** [4]

Is readily available information and contraception really the best way to improve sexual health? What is 'sexual health' from a Christian perspective anyway?

Pill does ease period pain **(BBC, 18th January 2012)** [5]

Is it acceptable for a Christian woman to use the pill for this reason if she would not use it for contraception?

HFEA to consult on ethics of 'mitochondria transfer' **(HFEA, 19th January 2012)** [6]

What is the HFEA and what are 'mitochondria' and how are Christian laypeople, or even pastors, meant to keep abreast of scientific developments so that they can make ethically informed choices?

Dangerous Abortions on increase says WHO **(BBC 19th January 2012)** [7]

Is legalised abortion a 'necessary evil' to prevent deaths from illegal procedures? Isn't family planning also necessary to prevent unwanted pregnancies?

Abortion clinics cleared for TV by advertising body **(BBC, 21st January 2012)** [8]

What are the moral issues surrounding abortion? Is it ever acceptable from a Christian perspective? How should Christians respond to the widespread social acceptance of abortion and to women who have had abortions?

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[1] http://www.telegraph.co.uk/health/healthnews/8660450/Premature-baby-survives-after-doctors-advised-abortion.html
[2] http://www.dailymail.co.uk/news/article-2059016/Michelle-Duggar-pregnant-19-Kids-Counting-20.html
[3] http://www.bbc.co.uk/news/uk-16056941
[4] http://www.bbc.co.uk/news/uk-england-kent-16567855
[5] http://www.bbc.co.uk/news/health-16597692
[6] http://www.hfea.gov.uk/6898.html
[7] http://www.bbc.co.uk/news/health-16618156
[8] http://www.bbc.co.uk/news/uk-16663800

Obama Administration: Religious Employers Must Pay for the Pill **(Time, 21st January 2012)** [9]

Are any forms of contraception acceptable for Christians? Why would Christian organisations have an issue with the oral contraceptive pill?

Advanced Cell Technology: Stem cell retinal implants safe **(BBC, 24th January 2012)** [10]

Is it acceptable to use cells from embryos if it is clearly to alleviate suffering? Does it make a difference if these embryos are produced for this purpose or would have been discarded as 'surplus to requirements' after fertility treatment?

Contraception row: I had implant because I felt like having sex says girl, 13
(Telegraph, 9th February 2012) [11]

Should contraception be available to teenagers without parental consent and even without their parents being aware? What is the role of the State as opposed to the role of the family in helping children through issues surrounding sex and fertility?

1.2 My approach

The headlines above and the issues they raise are mind-boggling in their scope and complexity. How can Christians begin to navigate them? My aim in this paper is to help people think through how they can best honour God in the choices they make around family planning and early life ethics. We will need two perspectives to form a clear understanding of the issues and how to respond well:

a) Scientific / medical

We need some basic knowledge about what happens naturally, what new possibilities human ingenuity creates, and what these human innovations entail. For this we will turn to science. The primary sources I have consulted to ensure scientific and medical information in this paper are accurate are NHS Choices, a government sponsored website providing information to the public in England and Wales, and the official websites of the Human Fertilisation and Embryology Authority (HFEA)[12] and the Department of Health. This knowledge is, however, purely descriptive. It tells us what *can* happen and *is* happening but not what *should* or should not happen. For that we need to have an understanding of what the Bible teaches.

b) Biblical / theological

As a Christian who recognises the authority of the Bible, as God's inspired Word, in all matters of belief and practice, I must know what Scripture says about the issues at hand. Scripture does not directly answer many of the questions we might ask about issues like contraception and abortion. We cannot simply quote a verse and resolve these issues. That is not, however, to say that the Bible is irrelevant, simply that we'll have to work a little harder to understand *how* it is relevant. We will need to grasp both relevant biblical passages and the whole message of Scripture to understand what God's purpose is. In other words, we need to develop biblical theologies of the beginning of life and of family planning. As we do so, we will reach a clear framework that will allow us to think 'Christianly' about the issues raised by the headlines above. I have described this aspect of the process as theological rather than philosophical because my

[9] http://healthland.time.com/2012/01/21/obama-administration-religious-employers-must-pay-for-the-pill/
[10] http://www.bbc.co.uk/news/health-16687974
[11] http://www.telegraph.co.uk/health/healthnews/9068843/Contraception-row-I-had-implant-because-I-felt-like-having-sex-says-girl-13.html
[12] The UK's official regulatory body for fertility treatment and medical use of embryos.

primary concern is to understand these issues from the perspective of God's good purposes for humankind rather than the application of human wisdom.

In this paper, I will proceed by considering the two issues of the beginning of life and family planning from each of these three perspectives. I will then draw together my conclusions into a framework for approaching issues in family planning before applying that framework to specific issues.

1.3 A word on words

A comment on terminology used in this paper is in order. In general, I have avoided technical and medical terminology in this paper, although in some cases I have added it in brackets or used it followed by a brief explanation. A glossary of terminology is provided in Appendix 3 for ready reference. By way of introducing the issues, however, I want to say something about the degree to which terminology reflects values and values are, in turn, shaped by the terminology we use. Consider, in the first instance, the words we use for the natural process through which babies are 'made'. It may be called reproduction or procreation.[13] The former term, which is more commonly used in education and science today, has connotations of a mechanical process, similar to the workings of a production line in a factory. Underlying the word is naturalistic and materialistic view of life – that the physical world is all that exists. It implies that the parents are in control of what is happening – they have reproduced themselves in their offspring. The older word 'procreation', on the other hand, suggests that the process is about participating in and extending the work of creation, a concept that clearly depends on a view that God initiated creation and that we are ultimately responsible to Him.

A second example of the way terminology reflects and reinforces values is the use of terms such as 'fetus' (derived from the Latin for 'offspring') and 'embryo' (derived from Greek words meaning 'into' and 'grow') for the baby in the womb at different stages of development. Some scientists prefer to use yet another term, 'preembryo', to describe the stage of development before 14 days. Critics of this term argue that such a distinction is neither warranted nor necessary. Some even suggest that talk of 'preembryos' is simply an attempt to imply a different status and thus justify research using embryos at this early stage of development. Undoubtedly, calling the unborn child a 'fetus' rather than a 'baby' makes discussions of abortion less emotive and speaking of a 'preembryo' may well do the same for debates over research using embryos. Interestingly, as we shall see, the Greek used in the New Testament makes no distinction between the unborn baby and the baby after birth. Although I will use the medically approved terminology in most places in this paper, at times I may describe the unborn human being as a 'baby'. If I do so, I make no apology, because I see no difference in the essence of what the individual is before and after birth.

These comments on terminology reflect the fact that our approach to such issues depends profoundly on our overall understanding of the world. I am a committed believer in Jesus Christ. As such, I accept the authority of the Bible that bears testimony to Him and to which He bore testimony. I affirm and find myself affirmed by the biblical story of creation, fall, redemption and final consummation. As such I want to use language that best reflects the realities of life shaped by that worldview. I expect that most readers of this paper will share my basic convictions. If so, then I encourage you to think deeply about how it should shape your understanding of these issues.

[13] I am indebted to Leon Kass, quoted on page 11 of Gilbert Meilaender, *Bioethics: A Primer for Christians* (1996, Paternost er), for this insight.

2. Biology: the Beginning of Life

2.1 Pre-scientific theories

Until the advent of modern medical science, the beginnings of human life were a mystery. The basic facts of procreation – that women were capable of bearing children during the years between the onset of menstrual periods (*menarche*) and their cessation (*menopause*) and that children were conceived through sexual intercourse with a man – were, of course, understood. If the woman had more than one sexual partner, the father's identity (paternity) could not be known with certainty, although physical traits could provide indications. Maternity, conversely, could not be disputed at the point of birth. Each child, then, had two parents – a mother, who could not deny her motherhood, and a father who may or may not be known and who may or may not accept the responsibilities of fatherhood.

What was unknown was the process through which life began and babies were formed in the mother's womb ('*in utero*'). There were likely to have been different theories. Some people speculated that the man's semen contained miniscule fully formed humans which could implant and grow inside the womb. In this view, the woman was a 'fertile field' in which the man planted his 'seed'. Others must have noticed that children tend to carry a mixture of physical traits from both parents and would have concluded that each contributed something into the formation of the child. There may again have been different theories about the point at which life began based on what was observable. Possibilities included the act of intercourse, the absence of a menstrual period, the point when the baby was first felt by the mother to move ('quickening') or the birth of the baby. Some sense of the process of development was attainable by observing miscarriages, but the picture was incomplete and the mechanisms behind it unknown.

Developments in medical science have radically transformed our understanding of the beginning of life and our ability to control it. The science of genetics allows us to understand how an individual inherits traits from both parents while advances in medicine and reproductive technology now allow people to control their fertility and many couples who have difficulty conceiving to find help. For the purposes of this section of the paper, however, we are concerned with the way in which reproductive technologies complexify the ethical landscape surrounding the beginning of life and the way in which human embryology (the study of the development of human life in the womb) expands the range of possible points at which human life may be considered to have started.

2.2 Scientific understanding

With the benefit of modern medical knowledge, we can now have a clear understanding of the beginnings of human life. Consider the following list of possibilities for the start of life:

Gametogenesis

Gametogenesis is the production of sperm in the testes men and eggs in the ovaries of a woman (sperm and eggs are collectively called gametes). The genetic material in gametes is different from other cells of the adult body because gametes contain half the number of chromosomes contained in other cells. Other cells contain pairs of chromosomes, but one of each pair is contained in the gamete. Gametes are not, however, genetically distinct from the man or woman whose body produced them. Their genes are only subsets of the individual's DNA. All the genes come from one individual and the sperm is a cell of the man's body and the egg of the woman's body. Furthermore, if the sperm and egg do not meet with a gamete of the other kind, they will

inevitably die, just like any other cell from the man or woman's body. There is no new life in a sperm or egg alone.

Fertilisation

Fertilisation occurs when a sperm penetrates an egg so that the genetic material from the two cells, originating in distinct human individuals, can combine. This results in a new, unique mixture of genes in a single-celled zygote (the earliest stage in the development of the embryo). Half of the chromosomes in the new embryo come from the father and half from the mother. The genetic distinctiveness of the new individual is even greater than this may imply as the chromosomes go through a process called recombination in which genes transfer between chromosomes in each pair. Your chromosomes, thus, are not identical to those of your parents. They are a new mixture of genes from each parent. New in the truest sense of the word because the combination of genetic material in each embryo has never existed before in the history of the world. That fertilisation is a unique beginning of something new is an indisputable fact of medical science. As a leading textbook on embryology describes it:[14]

> a new, genetically distinct human organism is formed

The embryo is not part of the mother's body; it is merely hosted within her body. It is a human organism, alive and indisputably part of the species we call *Homo sapiens*. Biologically, you began when a microscopic sperm cell penetrated an egg cell the size of a grain of sand and the DNA from each of your parents fused.

The zygote can no longer be said to belong to either parent alone – it contains something of each parent. The mother will house the developing baby for nine months, if the pregnancy proceeds normally, but, unlike an unfertilised egg, the zygote is no longer simply a cell of her body. It is 'other' from her. Amazingly, the zygote, even from day one is not microscopic, but visible with the naked eye. It is around the size of a small grain of sand (diameter 0.1mm). You have never been microscopic!

Beginning of differentiation of cells (Day 4-6)

During the first days of its existence the single-cell zygote divides into many cells, but all of these cells are identical. Between Day 4 and Day 6, the cells begin to differentiate. This means that rather than every cell being identical, new cells which will serve different functions. Although this is clearly an important point in the process of development it does not mark any intrinsic change in the nature of the embryo. The genetic material is the same as it has been – it is just that different genes are switched on and off in different cells – and it is the same individual embryo.

Implantation (Day 6-7)

The growing embryo embeds in the lining of the mother's womb (endometrium) around one to one and a half weeks after fertilisation. This marks the beginning of 'pregnancy' according to most definitions, since it is from this point that the embryo begins to be dependent upon the mother for fresh nutritional support rather than deriving its energy from what was packed into the egg cell. Prior to implantation it is possible for the embryo to pass out of the mother's womb before the mother is aware that fertilisation has happened. We really do not know how many embryos fail to implant in the mother's womb. Estimates vary from 30 to 70 percent.[15]

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[14] Ronan O'Rahilly and Fabiola Mueller (2000) Human Embryology and Teratology, 3rd edn. New York: John Wiley & Sons, p. 8

[15] See the article 'Physiology of Implantation' presented by T.G. Kennedy at the 10th World Congress on In Vitro Fertilization and Assisted Reproduction in 1997 – available online at: http://publish.uwo.ca/~kennedyt/t108.pdf.

Some have suggested that this potentially high rate of loss of embryos means that life cannot be considered to have begun until after implantation has succeeded. Against this point, the mother's body has prepared itself in the expectation of implantation. Even if many embryos fail to implant, the natural process is for implantation to occur. Additionally, it is likely that at least half of those embryos that fail to implant are defective in some major way and would be unable to progress through a successful pregnancy to a live birth. In the other cases, the reasons for failure of implantation are poorly understood.

The embryo will develop and change in important ways after implantation, but there is no intrinsic change its nature at the point of implantation. It contains exactly the same genetic material and does not gain anything other than a new source of external support.

Primitive streak appearance (Day 15-18)

From two to two and a half weeks after fertilisation, some embryonic cells form into a streak from which the individual will develop. This is a significant point in development because it determines whether the embryo will develop into one individual or more than one. If two streaks develop, identical twins will result. In some cases, no streak forms and the pregnancy does not progress. Some people suggest that primitive streak development marks the true beginning of individual existence since before this point it is impossible to be certain whether one or more individuals will come from the single embryo. There are, however, two difficulties with this claim. Firstly, it reflects our current understanding of the developmental process. We cannot currently tell until this point whether twins will result, but this outcome may already have been determined at an earlier point by genetic or environmental factors that are not yet understood. Secondly, this logic depends on thinking of the process working 'forward'. It considers the developing embryo and asks, 'When does the individual emerge'. When the question is considered 'backwards', however, the confusion disappears. An identical twin has his or her origin at the same point as anyone else – at fertilisation. That was the starting point of this individual's life.

Various stages in organ development

Organ formation (*organogenesis*) begins in week 3 as specialised cells begin to form into the shape of the organs that comprise a human body. By week 8, all of the major organ systems are almost fully formed.

One moment when we may think that something new has happened is when the heart begins to beat at around Day 22. Whilst the absence of a pulse is an important indicator of death in a person after birth, the starting of the heartbeat does not indicate any change in substance in the developing individual. It simply marks the start of a new way of conveying nutrition, oxygen and carbon dioxide around the body. The same chemical processes that sustain life were already happening before the first beat of the heart.

Another candidate for the beginning of life might be various points in brain development. The 'neural tube', a strip of tissue from which the brain and spinal cord develop, closes on Day 22 or 23, while the cerebral cortex, which is the part of the brain involved in functions such as memory and consciousness, appears on Day 42. Since the brain is the seat of awareness of self, brain development may seem to be a candidate for the beginning of personhood. There are, however, two difficulties with this idea. Firstly, in some cases, development becomes arrested and in others the brain can be damaged subsequently. Would that mean that the fetus ceases to be a person having previously been one? Secondly, brain development is far from complete at birth. Should a newborn baby be thought of as less fully a person simply because its brain is not fully developed? The presence of consciousness is significant for the person's story, but the fetus is the same living individual prior to and

subsequent to each stage in the development of the brain and all its other organs.

Embryo becomes fetus (Day 56; 8 weeks)

Prior to 56 days, scientists refer to the developing human as an 'embryo'. After that point up until birth, it is called a 'fetus'. This distinction may sound significant, but it is a purely man-made. The only difference between an embryo and a fetus, other than the fact that all the organs systems are now present is, as one scientist is quoted as saying, that "It looks like a wee baby".[16] In history, the fact that the individual now appeared like a baby sometimes caused a different legal status to be conferred on it. That was, however, based on ignorance about what was happening under the skin and at a cellular level. In reality, Day 56 is just another day in a gradual process of ongoing development of a unique individual whose existence began at fertilisation.

Quickening (around 14-20 weeks)

Quickening is the point when the woman first feels the baby moving. Historically, it was sometimes thought that life began at this point. Indeed, the word literally means 'coming alive'. That was, however, based on ignorance. Aside from the obvious issue that the baby's movement is felt at various times in different pregnancies – it is usually later in first pregnancies than subsequent ones – this way of thinking is now redundant given the fact that ultrasound can show movement much earlier, including the response to external stimuli at around 12 weeks. In any case, the baby's ability to move does not change the essence of what it is. The same unique individual whose life began at fertilisation has merely developed a new ability. Just as we do not define the value of a life after birth on the basis of abilities – disabled people are just as fully human as able-bodied people – we should not think this means the fetus now has greater value.

Viability

Viability is the point when the baby can live outside the womb. The lower limit of viability is currently around 5 months (22 weeks), with the youngest baby ever to have survived reportedly being born at 21 weeks and 5 days.[17] Around 50% of babies born at 24 weeks will survive, but medical advances continue to improve survival rates. Indeed, these very premature babies that survived did so only with a great deal of medical support. In future it is possible that fetuses could be transferred from the mother's body into an artificial womb, or even developed in an artificial womb from the beginning. The fact that viability is so dependent upon what medical support is available means that this is a highly arbitrary marker. Some laws surrounding abortion consider 24 weeks to be a significant point, with abortion being more easily procured prior to this point, but there is no scientific basis for this distinction. The same human individual has simply developed to a point when it can survive outside the womb, but even if it is fully developed and healthy it will continue to need a great deal of nurture from its mother or others for some time.

Birth

Birth is obviously a very significant point in the development of the baby in physical terms – a new way of obtaining oxygen and nutrients necessary to sustain its life and fuel its growth – and socially – a new kind of relationship with other individuals, especially its parents. Significant as this is, however, the essence of what the

[16] Professor David Baird of University of Edinburgh in *Human Embryo Research: Yes or No?* (1986, Ciba Foundation)
[17] http://www.canada.com/topics/bodyandhealth/story.html?id=db8f33ab-33e9-429f-bedc-b6ca80f61bdc

baby is does not change suddenly at birth. The baby is genetically the same and it remains highly dependent upon its mother (or a substitute). The fact that babies can be born at various points before or after the due date emphasises that birth is not a candidate for the beginning of life. A newborn baby is just as dependent as a baby in the womb. Birth is merely a change of location and of means of sustaining life.

Stages after birth

The fact that physical development is a gradual process and that the same genetically distinct human individual is progressing seamlessly through its stages from fertilisation resolves once and for all the question of the beginning of life. But that does not necessarily mean that the value of these lives is acknowledged by everyone. Some philosophers distinguish between a human being and a human person.[18] If a 'person' is not merely a living human organism, but defined by some additional quality, perhaps unborn babies are not persons deserving legal protection. This line of reasoning usually leads to a point after birth being identified as the beginning of human 'personhood'. The most common suggestion is development of self-awareness, which occurs at around 18 months, when the child can recognise that his reflection is himself. The question of personhood will be discussed in the next section.

2.3 Multiple parents and new reproductive technologies

If asked how many parents they have, most people throughout history would have answered this question simply – 'Two!' For others, however, the picture is not so simple. They may have nurturing parents – the people who raise them – who are not their biological parents, perhaps through adoption or stepparents through the remarriage of one or both. Still, it has been a fact that only two biological parents were involved in procreation. The man impregnates the woman when his semen is released into her reproductive tract where one or more sperm cells penetrates one or more of her egg cells and fertilises it. Fertilisation is the key event in the process of conception, through which pregnancy is established.

Modern technology has complicated the picture. With the development of invitro fertilization, life can begin in the laboratory. Sperm and egg are brought together by a scientist and that means they may come from a man and a woman who have never met and the embryo that is produced can be implanted in the body of another woman who did not provide the egg.[19] She may also be a surrogate for a different couple of or individual who intend to raise the child.

An additional possibility is that the egg may contain DNA from two different women. Within our cells is a nucleus which contains DNA from both of our biological parents, but there are also structures in the cells called mitochondria which have their own mitochondrial DNA (mDNA). This is inherited exclusively from the mother and in rare cases it can have a defect that causes a disease. Since 2017, donation of mitochondria has been permitted in the UK to prevent the passing on of disease-carrying mDNA. This means that the nucleus from the egg provided by the biological mother who carries these disease-causing genes is removed and put into an egg cell from a different woman whose mDNA is normal. [20]

[18] Peter Singer is probably the most well-known of these.
[19] Louise Brown, the world's first 'test tube baby' was born in 1978.
[20] See http://bit.ly/3cpUuBR. An alternative form of mDNA donation is possible, in which the nucleus of an embryo is tran sferred instead of the nucleus of an egg cell.

The result is that a child today could have up to four 'biological parents', none of whom might be involved in the child's nurture after birth:

- **A man who provides the sperm** (this may be an anonymous donor);
- **A woman who provides the nucleus of the egg** (this could also be an anonymous donor);
- **A woman who provided the rest of the egg, including the mitochondria;**
- **A woman who carries the baby** (this could be a surrogate mother who is not the biological mother).

It may be unlikely that any individual will have four different 'biological' parents in these ways, but it possible and my point is to illustrate that modern medical technologies have made the question of parenthood more complex. Most significantly, they have separated our genetic parenthood from childbearing and have increased the possibilities for genetic parenthood and childbearing to be separated from nurture of the child. This is one of the reasons that early life ethical questions have become more prevalent.

2.4 Conclusion: when did you become you?

If we ask the question, when did you become you, there is only one logical answer based on our understanding of biology. The only unquestionable point in the process of development when something new begins that was not there before is fertilisation. That is when each human individual had his or her beginning. From this beginning, the development of the body is a continuous progressive process. As with any living organism, from day one the embryo fights to survive and grow. It is packed full of energy from the mother's egg and contains the programme in its DNA and the hardware to develop into a fully formed human body. It is not self-sufficient. It needs a suitable environment – the protection of the mother's womb – and will soon run out of energy, needing nutrition from elsewhere – the mother's blood supply. That should not, however, cause us to see it as less human than we are. We too need the right environment and continued nutrition if we are to survive. This point is made clearly in an article from the Witherspoon Institute:[21]

> the developing human embryo is not "a potential human being" (whatever that might mean) but a human being with potential—the potential to develop […] through the fetal, infant, child, and adolescent stages and into adulthood with his or her identity intact. […] all [the embryo] needs to develop to the mature stage is what human beings at any stage need, namely, a suitable environment, nutrition, and the absence of injury or disease.

The embryo formed in fertilisation has begun on the continuous journey of development that, if all goes well, will lead to a live birth of a healthy and unique human individual.

Indeed, the process of physical change continues throughout life, with development up until early adulthood and then subsequent decline. We cannot say definitively when a 'young man' becomes an 'old man', or even when the nebulous category of 'middle age' begins. Dividing points between life stages outside the womb (the 4th, 12th, 18th, 21st, 40th or 65th birthday) are arbitrary, human markers superimposed upon a continuous process. Similarly, development in the womb is a continuous process. We speak of days and weeks as markers of stages and the medically approved terminology changes, but these do not signal a change in essence.

[21] Lee, Patrick, Tollefsen, Christopher O. and George, Robert P. (2015) 'Marco Rubio Is Right: The Life of a New Human Bein g Begins at Conception', *Public Discourse*, The Witherspoon Institute.

3. Philosophy: Defining Personhood

In the previous section, I explained that some ethicists argue that unborn children, and even infants before the development of self-awareness, should not be regarded as having the same value as human beings after birth. Their basis for this claim is generally based on the idea of personhood, which is described as a quality that is distinct from merely being human. Clearly this way of thinking has ramifications for the ethical status of people of any age who lack self-awareness, including those who are severely mentally handicapped or those in advanced stages of dementia. It would allow for involuntary euthanasia of people who lack this faculty due to disability, brain injury or dementia. It would also justify infanticide of disabled or ill babies, especially those with life shortening conditions. One difficulty in discerning whether a person has self-awareness is that it is simply impossible to say whether someone who cannot respond in the expected way to some stimulus or test has a subjective sense of self-awareness. We cannot get inside the experience of another. But the problem with basing personhood on a mental faculty is that it is a subjective judgement made by some people about others and once that principle is established there is no intrinsic value to any life.

Personhood, if it is distinct from individuality, is not an intrinsic quality, but one that is attributed by others. The law, agreed by society or its elected representatives or imposed by those who hold power, defines what a person is. If the law says an unborn child is not a person, it is not a person. But every other individual then is at the mercy of those who make and apply the rules. What would stop a totalitarian regime from changing the definition of personhood to exclude whole groups of people on the basis of ethnicity, religion or political persuasion? Even in a democracy, we cannot be sure that the law reflects the majority opinion or the opinion of the most informed people. It was only after legislation permitted abortion that medical codes of ethics changed to justify it (see the timeline of changes in Appendix 2) and public opinion sometimes lags behind regulations and at other times runs ahead of them. The idea that some lives are protected in law because they are deemed to have personhood is arbitrary and dangerous. As Christian philosopher Nancy Pearcey writes, it creates, "a new category of individual: the human non-person".[22] What other human individuals may be placed into this category in future?

Personhood cannot be defined by science alone. We must bring values from some other source to bear to decide what status the embryo should have. Consider two examples from a paper in favour of research using cells taken from embryos presented by Professor Bernard Williams of the University of Cambridge in a 1980s symposium on the subject.[23] Firstly, approves of the insistence in the 1984 Warnock Report [24] that it would be morally unacceptable to subject a child or adult to research that might cause harm or death. Neither Warnock nor Williams explains why that should be so. They simply present it as an indisputable axiom. Yet science does not provide the ethical standard they insist upon. Why would it not be legitimate to use weaker specimens of our species for the sake of the stronger to enhance the overall fitness for survival of the species? We need a moral code to guide science in its methods.

Secondly, Professor Williams argues that embryos are in a different category from adults and children. He says that no one would describe an acorn as an oak tree or a caterpillar as a butterfly merely because the former can develop into the latter. Similarly, he argues, an embryo is not yet a human being even if it would develop into one in favourable circumstances. The problems with this line of reasoning are threefold. Firstly, Williams words

[22] Pearcy, Nancy (2018) *Love Thy Body: Answering Hard Questions About Life and Sexuality*. Grand Rapids: Baker Books, p.19.
[23] Williams, Bernard, 'Types of moral argument against embryo research' in *Human Embryo Research: Yes or No?* (1986, The Ciba Found ation). The relevant pages are p.187 and p.192.
[24] This Report established the principle that the embryo should be protected but that embryo research and IVF were permissible so long as certain safeguards were respected. It is available online: http://www.bioeticacs.org/iceb/documentos/Warnock_Report_of_the_Committee_of_Inquiry_into_Human_Fertilisation_and_Embryology_1984.pdf.

his argument in a way that makes his conclusion seem favourable. He says, rightly, that no one would call the earlier life stage by a word reserved for the later life stage. Acorn is not oak tree; caterpillar is not butterfly. But then he says that embryo is not human. Yet the parallel ought to be that embryo is not adult. Had Williams asked whether anyone would call both acorn and tree 'oak' or both caterpillar and butterfly 'Rhopalocera' (the Latin name), the answer would be different. Embryo is not adult, but it is human.

Secondly, Williams' examples are misleading because human development, unlike that of insects and trees, does not occur in discreet, distinguishable stages. It is, as we have seen, a continuous process. It cannot be put on hold in normal circumstances like an acorn that can lay dormant for some time before germinating. Nor is there a point at which the developing human metamorphoses into a new lifeform as a caterpillar does.

Thirdly, and most importantly, Professor Williams has performed a kind of logical sleight of hand by introducing an ethical principle without stating it. His argument rests on the assumption that human beings are the same kind of 'thing' as caterpillars and oak trees. According to a naturalistic worldview this is correct, but if human beings are different from other species then we might attribute a different kind of value to them. Similarly, Williams' reason for not experimenting on children and adults is that he does not want to harm them. If an embryo is not aware and experiences no pain, then there is no negative consequence from using it in experiments. But this kind of consequentialist ethic is only one way to understand morality. What if there are some principles of right and wrong that are universally binding?

This somewhat dated example illustrates the fact that decisions about early life ethics require values that come from outside scientific knowledge. We need to decide whether there is a stage in human development that should not be regarded as a person and we must have a basis to explain why it would be wrong to end any human life. For the Christian, these questions can only be answered by reference to the Bible.

4. Theology: Biblical Truth About Life

4.1 Historic Christian perspectives

The Bible does not engage in philosophical debate around personhood. The word 'person' was first used by Christian writers, notably Tertullian of Carthage, as they sought to explain the trinity as three persons in one. In Christian history, some writers have sought to define the concept in terms of rationality. Others have thought that there is a point of 'ensoulment' when the developing body is endowed with a soul by the Creator. Quickening was sometimes thought to be the sign that this had happened.

These theories raise the possibility that unborn children in the early stages of development should not be regarded as full human persons. They are sometimes mentioned by people who want to suggest that Christians do not need to oppose abortion. There are, however, two problems with these theories. First, they were based on ignorance about physical development. We now know that there is a continuous process of development and that quickening is not a significant point. Second, these ideas find no support in Scripture. We must base any truly Christian understanding of the value of life on the Bible.

4.2 Created in God's image

The Bible lays firm foundations for the sanctity of human life in its statement that human beings are created "in the image of God" (Genesis 1:27). There are no exceptions to this principle on the basis of physical ability, self-awareness or mental capacity. The implications are clear in God's words to Noah after the Flood: "Whoever sheds the blood of man, by man shall his blood be shed; for in the image of God has God made man" (Genesis 9:6). The context is that God has permitted people to kill animals for food. By contrast, human life is to be treated with special regard and it is a serious offence to take the life of another human being. The person who does so person effectively denies his own right to life. The only exceptions to this principle are when the State administers God's justice through capital punishment and when God commands Israel to go to war. Christians will differ over whether modern nation states should have capital punishment and whether there is ever such a thing as a just war today, but outside these possible exceptions, it is always a sin of the highest order to kill another human individual.

Importantly, the biblical understanding of human beings is that we are ensouled bodies or embodied souls. Indeed, the idea that a body can be living without a soul is directly contradictory to Scripture, which explains that separation of body and soul results in death of the body (Job 34:14; Genesis 35:18; 2 Timothy 4:6; 2 Peter 1:13, 14; Matthew 10:28). It is possible for the soul to continue to live without a body (Hebrews 12:23; Revelation 6:9, 10), but this is a temporary and abnormal state between the death of the bodies we now inhabit and the resurrection, when we will receive a new body which is incapable of death or decay (1 Corinthians 15:35ff.).

4.3 Inheritance of humanity

The Old Testament places great emphasis on genealogies and inheritance, locating individual identity within a family line. All human families ultimately trace back to the first human beings, who were created directly by God. Genesis 5:1-3 says that God created the first man, Adam, in his own image and that Adam's son, Seth, was born in Adam's likeness. It has been suggested that this implies a lesser value for Seth because he was born after sin entered the world. Perhaps we should not talk of fallen human beings as divine image bearers? But remember that God again spoke of human beings as created in his image after the Flood (Genesis 9). Whatever impact sin has had on us, we retain the value that being created in God's image confers. The New Testament continues this pattern, as Luke traces Jesus' ancestry back to "Adam, the son of God" (Luke 3:38).

This principle of inheritance of human identity fits perfectly with what we see in modern science. It is still impossible to produce a new human life without a sperm from a man and an egg from a woman, or at least the nuclear DNA from each. This DNA was not created by human beings but has been passed down since the origins of mankind. Even if it were possible to develop techniques through which the entire DNA sequence of an individual could be manufactured synthetically and used to conceive a new life, it would have been manufactured based on the pattern of existing human DNA sequences. In other words, the people who made the synthetic DNA would not have created the information that the DNA encodes. That information originated before us and carries on through us to the next generation. Scientists will never be able to say they 'created' life or a new individual. They are simply engaging through technology in the same process of pro-creation that human beings have engaged in through natural means since the origins of our species.

This line of reasoning raises important questions about the real origin of life and of information. Christians believe they come from the mind of God, our intelligent designer. The origins of information encoded in the 'language' of DNA are a mystery to those who reject the existence of God. It also reminds us that we are merely stewards of life and the information that codes for our bodies. We do not possess or own them. Each generation receives them as a sacred trust from past generations and passes them on. The Christian should approach all

issues concerning the beginning of life within this framework of stewardship. As stewards, we are responsible ultimately to the Creator of life, the Author of DNA, and we must act in ways that are in keeping with his intention in creation. We cannot be guided simply by what is possible, but we must ask what is acceptable and what is good, measuring both by our understanding of God and His purposes for us.

4.4 The equal value of the unborn

The biblical pattern, then, is that human identity derives from descent from Adam and every individual human being has unique value as part of the human family.[25] We are all 'in Adam' and we all deserve equal honour and protection. The question becomes whether this same value extends to the unborn child. To answer that question we must look at all parts of the Bible.

Old Testament poetry – formed and known by God

Several poetic Old Testament passages express awareness of God's action forming the individual in the womb. From the perspective of the living person, they look back at their development and acknowledge God's awareness of them and sovereign involvement in their lives from the very earliest stages:

- **Job 10:8-11**: "Your hands shaped me and made me. Will you now turn and destroy me? Remember that you moulded me like clay. Will you now turn me to dust again? Did you not pour me out like milk and curdle me like cheese, clothe me with skin and flesh, and knit me together with bones and sinews?"
- **Job 31:15**: "Did not he who made me in the womb make them? Did not the same one form us both within our mothers?"
- **Psalm 139:13-14,16**: "For you created my inmost being; you knit me together in my mother's womb. I praise you because I am fearfully and wonderfully made. […] Your eyes saw my unformed body; all the days ordained for me were written in your book before one of them came to be."
- **Isaiah 44:2:** "This is what the Lord says – he who made you, who formed you in the womb, and who will help you".
- **Isaiah 49**:**1,5:** "before I was born the Lord called me; from my mother's womb he has spoken my name. […] And now the Lord says – he who formed me in the womb to be his servant".

These verses express confidence that God watches over the process of development in the womb. There was no question in the minds of these authors that their lives began with the earliest stages of their physical development. The language of Job 10, which speaks of milk and curdling almost certainly refers to the earliest stages of the embryo, presumably based on what observed in cases of miscarriage.

New Testament narrative – the child in the womb

The involvement of God in the lives of the unborn is also clear in the narratives in Luke's Gospel about the conception and birth of Jesus. We read that John the Baptist leapt in his mother Elizabeth's womb when the pregnant Mary came to visit her (**Luke 1:39-45**). This may imply that the baby in the womb was conscious, although we cannot be certain, but it certainly indicates the continuity of the person before and after birth and

[25] For more on the question of human personhood, see my paper *What Does it Mean to Be Human* available online at: www.bethinking.org/human-life/what-does-it-mean-to-be-human.

some capacity in the unborn child to respond in praise to God. Significantly, Luke uses the same Greek word, *brephos*, when speaking both of the fetal John the Baptist in Elizabeth's womb (**Luke 1:41, 44**) and the baby Jesus lying in the manger (**Luke 2:12, 16**).

Ephesians – chosen before the foundation of the world

The Bible consistently emphasises the continuity of the individual before and after birth. In fact, Scripture tells us that God's knowledge of individual human beings does not begin with their conception, but in eternity past, before the universe was created. **Ephesians 1:4**, for example, says that God "chose us in [Christ] before the creation of the world". Biologically, your life began with fertilisation, but theologically God's knowledge of you, love for you and plan for you began long before when he put into place his good purpose to create the world and to redeem a people for himself.

Another scriptural passage that is often referenced in discussions about abortion is **Exodus 21:22-25**, which speaks about a pregnant woman being struck with the result that her baby is delivered prematurely. The penalty in this case is restitution for injury to the woman, with no reference to any punishment for the effect on the baby. The debate around this passage concerns whether the baby is dead or alive. Is the baby is born prematurely because of the blow (as the main text of the NIV suggests) or does the blow result in a miscarriage (as the NIV footnote suggests)? If miscarriage is in view, it has been argued that this passage suggests that an unborn baby was not regarded as having any value as a person. So, is that correct? The Hebrew verb used in the verse means literally "the child comes forth". While it could in theory mean a miscarriage, its usage elsewhere in the Old Testament suggests that a live birth is in mind (e.g. Genesis 15:4; 25:25-26; Jeremiah 1:5). Indeed, there is an alternative Hebrew word that means miscarriage (used, for example, in Hosea 9:14). If Exodus 21 is referring to a live birth, the principle of "eye for eye" (verses 24-25) could be understood to apply equally to injury to either mother or baby. This passage cannot, then, be a basis for rejecting what is clear throughout the Bible as a whole, that lives are just as precious before birth as afterwards.

4.5 Conclusion: human life is sacred from fertilisation

Combining the biblical perspective that every living human individual is a person with the scientific knowledge that life begins at fertilization, we must conclude that the embryo, even in the earliest stages, should be treated as 'one of us'. Embryos and all unborn children deserve the same honour and protection as people after birth. In fact, given the strong scriptural imperative to protect the vulnerable, it could be argued that unborn children deserve even greater protection than those who are able to protect themselves.

5. Family planning

5.1 Scientific possibilities

Family planning includes two dimensions:

a) assisting couples who are struggling with infertility to conceive children; and

b) allowing fertile couples to decide how many children they will have and, often, when they will have them.

These two dimensions are concerned respectively with increasing or limiting fertility, facilitating and preventing conception, and promoting or inhibiting procreation.

Infertility treatment

Infertility treatment aims to help couples who experience infertility to conceive. A few individuals are completely infertile, including:

- women whose ovaries have not developed, have been removed or have ceased producing fertile eggs (post-menopausal);
- men whose testes have failed to develop, have been removed or have been damaged so that they produce no sperm at all (*azoospermia*);

In most cases, however, people are 'subfertile' than 'infertile'. One in every six or seven couples in Western countries will have some difficulty conceiving. Treatment is usually offered to the 5% of couples who fail to conceive naturally after two years in which they are having regular unprotected sex.[26]

Causes of subfertility are varied, including genetic factors, environmental toxins, prior medical conditions (e.g., infections) or treatments (surgery or drugs, including chemotherapy). Fertility also declines significantly in women with increasing age. In the UK the main factors contributing to subfertility are:[27]

- factors in the male such as reduced sperm count, poor motility of sperm, erectile dysfunction, or a blockage in the vasa deferentia, which are the tubes that carry sperm from the testes to the urethra (30%);
- disorders of ovulation (25%);
- damage to the fallopian tubes, which carry ripe eggs to the uterus (20%); and
- disorders of the womb or within the woman's abdomen (10%).

Around 25% of cases are unexplained (no cause is identified in the man or the woman) and around 40% are caused by a combination of factors in both the man and the woman. Male infertility is generally more difficult to treat than female infertility.

Three broad types of infertility treatment are available:

1. ***Drugs*** – some subfertile women can be helped by drugs that stimulate ovulation (the release of eggs). Less commonly, hormones can increase fertility in some men.
2. ***Surgery*** – when the woman's fallopian tubes or the man's vasa deferentia are blocked.
3. ***Assisted conception*** – these techniques aim to help bring sperm in contact with the egg with the hope that fertilization will occur. Techniques include:
   - *Artificial Insemination* (AI) deposits sperm in the woman's vagina. This can help men who experience erectile dysfunction or whose sperm motility is defective, since the healthiest sperm can be selected.
   - *Intra-Uterine Insemination* (*IUI*) is similar to AI, but the sperm is deposited inside the uterus, which has the advantage that the cervical mucus, which can be a barrier to sperm, is bypassed.
   - *Gamete Intra-Fallopian Transfer* (*GIFT*) places treated eggs and sperm into the woman's fallopian tube. This technique has become significantly less popular with improvements in IVF.

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[26] www.nhs.uk/Conditions/Infertility/Pages/Introduction.aspx

[27] Figures derived from a NICE briefing paper, 2014: https://www.nice.org.uk/guidance/qs73/documents/fertility-problems-briefing-paper2.

- *In-Vitro Fertilisation* (*IVF*) unites sperm and egg in the laboratory rather than in the woman's body.

In each of these techniques, gametes are removed from at least one parent, raising the possibility that either sperm (in all cases) or egg (in GIFT and IVF) or both could be donated:

Birth control

Birth control includes any method that aims to reduce the number of live births of babies, including:

1. ***Contraception*** – methods that prevent the fertilisation of the egg. The term is a contraction of 'contra-conception' meaning literally 'against conception'.
2. ***Contragestion*** – methods that prevent the implantation of the zygote (fertilised egg) in the womb. This word, which is not widely used, is a contraction of 'contra-gestation', meaning literally 'against pregnancy'. Methods of contragestion are often described as forms of contraception, but the distinction between the two is important for anyone who acknowledges the embryo as being precious.
3. ***Abortion*** – the termination of an established pregnancy (defining 'pregnancy' as beginning with the implantation of the embryo).

5.2 Biblical insights

When people look to the Bible for a perspective on family planning, they are often looking simply for approval or disapproval of specific forms of birth control. There is, however, a deeper question. Does the Bible approve the very idea of family planning? Does God allow human beings to limit the size of their families and to decide when their children will be born? To answer these questions, we must consider a number of passages.

Genesis 1:28 – The command to multiply

At the beginning of the Bible God commands the first human beings to, "Be fruitful and increase in number; fill the earth and subdue it" (Genesis 1:28). God's desire was that human beings would live in relationship to him, under his rule, acting as his stewards in ordering and ruling over creation. Adam and Eve's sin ruined this perfect situation, leading to widespread effects throughout creation. They succeeded in multiplying but, instead of subduing the earth by ruling responsibly over it, their descendants became increasingly rebellious. Their multiplication became destructive. Eventually, God acted in judgement through the Flood but, in his grace, he saved Noah and his family. After the Flood, God repeated his command to Noah to multiply: "Be fruitful and increase in number and fill the earth" (Genesis 9:1).

Some Christians, taking these divine commands as absolute directives for all time, have rejected all forms of family planning. The Christian's duty, they argue, is to have a large family and so contribute to the filling of the earth. Such thinking is overly simplistic for several reasons:

- **It ignores the context.** When God issued this command, the number of human beings was very small (two and then eight), so multiplication was essential in order for them to subdue the earth. There was no possibility of overcrowding or shortage of resources. We may ask when the command to "fill the earth" would be complete. How many human beings do we need on the planet to fulfill God's purpose? The command cannot mean that we should continue multiplying until the whole planet has been stripped bare of resources or every single square inch of earth is covered in human biomass. There must be a limit and couples must

play their part within the whole human race to ensure we do not overcrowd the planet.

- **It neglects the tension between multiplying and subduing.** Human beings are commanded both to multiply and to be stewards of God's earth. At times, these two commands may be in tension. By multiplying further, resulting in overcrowding, we may harm the earth. That would violate the command to subdue and be good stewards of God's creation. The command to multiply is for the purpose of the command to subdue.
- **It is unduly individualistic.** The command to multiply is given to the human race as a whole rather than every individual human being. Each generation of human beings has a responsibility to ensure the human race continues to the next generation, but this does not mean that every single human being must have as many children as possible. If that were so, single people and childless couples would be irrelevant in God's purpose.
- **It neglects the priority of mission.** The New Testament is clear that singleness is a legitimate and honourable calling from God (see the comments on 1 Corinthians 7 below). This would not be so if the command to multiply meant that every individual must have as many children as possible. In that case, Jesus Himself would have been guilty of breaking it, since he had no children.
- **It neglects physical limitations.** It is unsafe for a woman to have too many children due to the strain each pregnancy places on her body. There comes a point when it is unwise for a couple to continue to have babies if they do not wish to put her life at unnecessary risk. Similarly, with increasing maternal age there is an increased risk that the baby will have certain congenital problems.
- **It neglects the responsibility to care for children.** Thinking of this command as absolute could turn children into 'objects' to be produced for the sake of multiplication. But parents are given the sacred trust of raising their children in the fear of God. A couple must ensure they can provide adequately for their children in terms of resources and time. It would be irresponsible to bring additional children into the world without adequate food to feed them or time to teach them. As individuals we have limited energy, time and gifts to use to subdue whatever part of the world we are responsible for, including our children.

Genesis 2:24 – The marriage bond

Marriage between one man and one woman is clearly presented throughout Scripture, beginning here in Genesis 2, as the context God has designed for procreation. The Old Testament consistently upholds this ideal, even though it describes many breaches of it. Christ reiterated it (Matthew 5:27-32) and the New Testament epistles consistently maintain it.

Genesis 5 – The importance of generations

The Bible contains many genealogies of families and nations, of which this chapter is the first. There is clearly great significance in the continuation of family lines, especially the male line of descent. It seems reasonable to say that the Bible emphasises the importance of the kind of inheritance that we now know to be genetic. This suggests that assisting subfertile children is, in principle, a noble thing to do.

Genesis 16 and 30 – Surrogacy in Abraham's family

The narrative books of the Old Testament include vivid accounts of family life, especially the family of Abraham in Genesis. We must be cautious about drawing absolute principles from such accounts of historical events and we must evaluate people's actions against the standards of right and wrong revealed elsewhere in the Bible.

Surrogacy appears twice in Genesis. In both cases a woman who was unable to produce children gave her servant to her husband to act as a surrogate mother. Sarai gave Hagar to Abraham in Genesis 16 and Rachel gave Bilhah to Jacob in Genesis 30. The consequences in each instance were major tension within the family. Indeed, the continuing hostility between Arabs and Jews stems from the split between Hagar's son, Ishmael, and Sarai's son, Isaac, who are their respective ancestors. More significantly, both acts demonstrated lack of faith in God.

In the absence of modern infertility treatments, these biblical cases of surrogacy involved intercourse between the man and the woman who was not his wife, which was in itself a violation of God's purpose for marriage. More importantly still, however, Abraham was given God's covenant promise and it was inherited through the generations by Isaac and then Jacob. The failure in faith was simply about personal fulfilment through parenthood or even individual inheritance. It was a lack of confidence that God would fulfil his promise to bless all nations through this family. When infertility, or barrenness, since in Scripture it is invariably the woman who is described as being infertile,[28] is described in the Bible, it is always a challenge to greater faith in God. We see the same principle in Hannah (1 Samuel 1) and Elizabeth (Luke 2). That does not mean that seeking medical help with infertility is wrong but it does remind us that every circumstance should drive us to prayer and greater trust in God.

The negative portrayal of surrogacy indicates that some ways of trying to overcome subfertility may violate God's intentions for us. Even though modern surrogacy does not need to involve intercourse between unmarried people, the negative portrayal in Scripture suggests a negative view on surrogacy. We may not be able to say that it is always unacceptable, but it is vitally important to understand how it separates out aspects of motherhood that normally belong together and to consider what relationship the woman who carries a baby which is not genetically hers should have with it after birth. I doubt that surrogacy is ever a wise course of action for a Christian couple.

Genesis 38:8-10 – The case of Onan

Another event within Abraham's family that is sometimes referred to in the context of family planning is the story of Onan in Genesis 38:8-10. Onan practised *coitus interruptus*, which is a form of natural birth control in which the man withdraws from the woman prior to ejaculation. God disapproved and actually put him to death. Some Christians have taken this to mean that God disapproved of the practice of *coitus interruptus* and, by extension, that all forms of birth control are unacceptable to God. That is, however, a misreading of the story. Onan's crime was not that he practiced *coitus interruptus*, but that he refused to provide his dead brother with an heir. Tamar, who he refused to impregnate, was the widow of his brother Er. Under the Hebrew custom of Levirate marriage (see below), he had a duty to carry on his brother's line. This passage does not, therefore, say anything about the legitimacy of contraceptive measures.

Deuteronomy 25:5-6 – Levirate marriage

Continuation of the family line was so important within Israel that the Law included a requirement that a close

[28] Some critics of Scripture may say that this focus on female infertility reflects limited understanding at the time, since mo dern statistics show that male infertility is just as prevalent as female infertility. This accusation misses the point, however, that Scripture is only describing specific instances where it was the woman who was barren, not making a generalised stat ement about causes of infertility. Furthermore, it is quite probable that male infertility was less common in these ancient s ocieties than it is today as sperm counts may have been significantly higher in the absence of pollution and other environm ental causes of low sperm counts.

male relative of a man who died without children must marry his widow and that their firstborn child would be considered the heir of the deceased man. This practice, called Levirate marriage, is mandated in Deuteronomy 25:5-6. It was intended to ensure the continuance of the inheritance. This law was given specifically to the nation of Israel and Christian scholars recognise it as one of many laws intended to regulate the life of that nation that do not apply directly to Christians because we are part of the new people of God that began with Jesus. The law does, however, shows that continuance of a family line is important. This may cause us to think about the idea of gamete donation. On one hand, if gametes are donated by a close family member the genetic relationship of the parents who intend to raise the child is closer than if donated gametes come from a stranger. This situation is not, however, parallel to Levirate marriage as that provision was to keep the line of a dead man alive rather than to help with subfertility in a couple. I will discuss the ethics of gamete donation later in this paper.

Psalm 127:3-5 – Children are a blessing from God

A passage that is frequently referred to by advocates of large families is Psalm 127:3-5, which describes children as a heritage and reward from God. To see this as support for having as large a family as possible would be to misapply the passage. This is a poetic statement and is not intended to be directive (i.e. to tell us how to live). The correct application of the psalm would be for those who are parents to remember that their children are a gift from God and to give thanks to Him for them. In addition, the reason why the man with many sons is said to be blessed is that he will have many allies to fight with him against his enemies (v5). It could be argued that in situations where a man is not trying to form a small army (or a football team) because he has no need to do so (perhaps he has no enemies or prefers volleyball to football) it is both legitimate and wise for him to have less children. This is evident in the fact that numbers of children per family drop significantly in developed nations where there is less likelihood of child mortality and where parents are less dependent on their children to help with survival tasks such as farming for food.

Song of Songs – God's good gift of sex

I will mention the Song of Songs in passing because it is a key text in helping us to understand that Scripture does not present sex as being simply about procreation. This poetic book celebrates sex as a wonderful gift from God to a couple through which they can express their love and intimacy and deepen their marriage bond. Throughout Scripture sex is consistently understood as a good gift to be enjoyed in the context of marital faithfulness. Although it is the means of procreation, it cannot be reduced to simply being a means to that end.

John 1:13 – Human decision and will

The primary purpose of this verse is to contrast the action of God in bringing new birth to those who believe in Christ with the action of a man in fathering children. It does, however, introduce an important principle to our discussion. John mentions "human decision" and "a husband's will" as elements within procreation. This reminds us that sex, however spontaneous it might seem at times, requires at least one person deciding to do it. In a healthy situation, there is a mutual desire for intercourse within marriage. In sinful situations one person forces the other person in rape. But there is always a decision to have sexual intercourse. Procreation, therefore, involves human activity which is based on human decisions.

This means that, although children are a gift from God and each person is uniquely created by Him, God has delegated to human beings the responsibility for bringing these gifts into the world and nurturing them. In the most significant process of all, the creation of a new human being with eternal potential, God has decided not to act sovereignly outside the choices of human beings. He involves us in the process. Only one child has ever

been conceived without human action and the exercise of the human will. The Lord Jesus was conceived miraculously in the womb of the virgin Mary. In all other cases, procreation is a partnership between human beings and God. This suggests that it is legitimate and proper for human beings to make decisions about how many children to have and what stage in life to have them at. To do so is not to reject God's sovereignty but to act responsibly in stewardship of an area of life in which He has called us to work together with Him.

This also reminds us that the offspring who result from procreation do not belong to the parents but to God. They are not our property to do with as we will. God made us stewards, and having family is part of that stewardship. I would suggest that family planning can only be wrong in principle if all planning is wrong and human decision and action does not matter. The principle expressed in James 4:13-15 applies to procreation. We can make plans but must submit them to the higher authority – to God's will. Planning need not clash with faith in God. To simply say 'God will provide' and so not act responsibly is inappropriate in other aspects of life. It may even constitute putting God to the test as to ignore the risks to a woman's health by persisting in having yet another pregnancy may be expecting God to be obliged to protect her.

1 Corinthians 7 – God's purpose for marriage and sex

1 Corinthians 7 is an important chapter in understanding God's will for marriage and sex. In this chapter Paul establishes several principles:

- both marriage and singleness are gifts from God and people are called to one or the other (verse 1 etc.);
- marital faithfulness is commanded by God (verse 2);
- sex is an important aspect of the marriage relationship and a giving of each to the other (verses 3-5);
- circumstances (the present crisis in verse 26) and devotion to the Lord's work should impact decisions about marriage.

Although procreation is not explicitly mentioned, this chapter provides places sex firmly within marriage and establishes the principles of God's specific calling for individuals and our responsibility to make wise decisions. There is every reason to believe that God calls some married couples to limit the number of children they have for the same reasons that he calls some people to remain single. Just as some are called to singleness for the sake of mission, some may be called to have fewer children than they might otherwise so they can give time and resources to God's work. The command to multiply was given before God began His plan of redemption through Abraham's descendant. Unlike Adam or Noah, we must consider how the commands to multiply human beings and to multiply disciples intersect in God's purposes for us.

1 Timothy 5:8 – Duty to provide

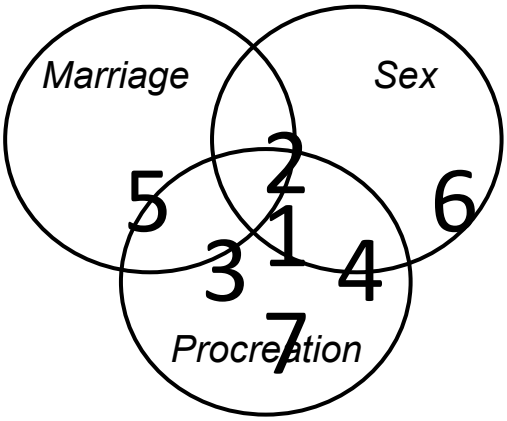
This verse clearly states a principle that flows throughout Scripture – the duty to provide for one's family. This principle may lead some couples to limit the number of children they have so they can provide effectively for them. We must be careful, however, that this is does not become a veil for greed (e.g., wanting more time and money to spend on themselves) or selfishness (e.g., wanting to get beyond the early stages of parenthood to get their lives and careers back for themselves). Our responsibility to our children is primary over all such concerns and of equal importance to our sense of calling to God's work too. No one who neglects his or her family because of busyness in 'ministry' is truly serving God.

What the Bible does not say

As I conclude this survey of Scripture, I must say something about what the Bible does not comment on. Nowhere does Scripture forbid family planning in principle or condemn natural means of birth control. It has a great deal to say about fertility through the stories of infertile couples who later received a child, but these stories do not forbid infertile couples from seeking medical help to overcome subfertility any more than stories about miraculous healings prohibit ill persons from receiving medical treatment.

5.3 Sex, marriage and procreation

Seven spaces in the inter-relationship of marriage, sex and procreation



In considering family planning, it may be helpful to think of three spheres of life that can be pictured, as in the diagram above, as overlapping circles: marriage, sex and procreation. It has always been possible for marriage and sex to be separate. We can engage in sex outside marriage. Throughout most of human history, however, it has not been possible reliably to separate sex from the possibility of procreation. Various forms of contraception have been used throughout history, but it was only in the twentieth century that highly reliable forms of birth control were developed which separated sex decisively from the possibility of pregnancy.[29] Similarly, it is only since the late twentieth century that procreation has been from sex through new reproductive technologies.

The potential separation of these spheres of life raises many important questions about what God's intended purposes are and what is acceptable for Christians. In the diagram above, I have labellled seven different spaces in which these three spheres of life do or do not overlap. Let me describe each of these spaces in turn considering whether it is morally acceptable for a Christian to inhabit them:

1. **Sex within marriage with the possibility of procreation**
   This is clearly a morally acceptable space for a Christian. In fact, it is presented consistently throughout Scripture as a God honouring and blessed pattern of life. Some Christians may think that this is the only acceptable space. The official teaching of the Roman Catholic Church is that sex should only occur within marriage and only for the purpose of procreation and so that contraception is wrong.[30] In my view, that

[29] For the sake of argument, we are here considering sexual intercourse between a man and woman involving vaginal pene tration.

[30] Roman Catholicism does allow for the exception that where it is impossible for one or both partners to have children, eit her permanently or temporarily, sex is permissible for the purpose of maintaining the marriage relationship. Where procre ation is possible, however, it is unacceptable to remove its possibility from sex.

perspective neglects the positive perspective of Scripture on sex within marriage as a celebration of the union of the couple and an enjoyable experience for both husband and wife. The view that sex must always include the possibility of procreation appears to derive from a non-biblical view, which entered Christian thinking from Greek philosophy, that sex is intrinsically unclean and so must have a higher purpose than simply celebrating and expressing love. Song of Songs explodes that myth.

2. Sex within marriage but without the possibility of procreation

This may happen without choice, through infertility, but the query is whether it is acceptable for a Christian couple to choose to operate in this space by deliberately practice birth control. I have argued above that there is no biblical prohibition on doing so and, in fact, that choosing the size of our families is part of our God-given responsibility stewardship of our lives and bodies. It is, therefore, legitimate for Christian couples to be in this space at times. We might ask, however, whether it is permissible for a couple to choose to function in this space permanently. Could a Christian couple decide to have a childless marriage? Given the importance in Scripture of continuing family lines, it may be argued that such a couple have given insufficient thought to their responsibility to prior generations of their families. It would appear to be exceptional for a married couple who are capable of having children to decide not to do so. I cannot see, however, any clear scriptural prohibition of a deliberately childless marriage

Applying the same logic Paul applies to marriage in 1 Corinthians 7, there may be exceptional circumstances in which it is desirable for the sake of mission for a couple to marry but unwise for them to have children. For example, women working in some Muslim majority countries may find it impossible to work with other women unless they are married, whilst men in these contexts may not be respected if they are single, yet concerns around safety may cause reluctance to have children. Two other exceptional cases relate to health issues. Firstly, if there is a high risk of a genetic disease manifesting in the children, it may be wise for the couple to avoid pregnancy. Secondly, a person may discover while still single that he or she will be unable to conceive children and that does not necessarily mean he or she cannot be married. Marriage is not simply about childbirth. It is also about the mutual development of the two people these possibilities cannot be ruled out.

3. Marriage with procreation but without sex

This space exists when a couple conceives children through new reproductive technologies like artificial insemination or IVF. In these cases, conception is removed directly from the sexual act. Procreation does, however, still happen within the context of the loving relationship between husband and wife. In most cases, this loving marriage bond will also be expressed through sexual intimacy, even if it does not lead directly to the baby's conception. So, I suggest that this space is ethically acceptable, although we will need to think about each form of assisted conception individually to determine if there are other ethical factors that may cause concern.

4. Sex with procreation outside marriage

This has always been possible, but scriptural consistently teaches that it is not morally acceptable for a Christian. Christians should, however, be at the forefront of showing compassion and offering practical support to single parents and their children.

5. Marriage without sex or procreation

Traditionally, marriages have had to be 'consummated' through sexual intercourse to be legally binding. UK law still allows a marriage to be voided if either party is incapable of consummating or refuses to

consummate the bond.[31] The marriage will, however, still be valid for legal purposes if both parties are happy not to consummate it. Scripture clearly expects sexual intercourse to be a normal part of marriage. It is implicit in the concept of marriage as two people becoming "one flesh" (Genesis 2:24). Indeed, sexual intercourse is presented in 1 Corinthians 6:16 as the physical expression of the marriage vows that make two people one. In 1 Corinthians 7, within his extended discussion of marriage and singleness, the apostle Paul teaches that man and wife have mutual responsibilities to one another sexually and should "not deprive each other except by mutual consent and for a time" (verse 5). He acknowledges the natural desire for one another within marriage and expects long-term abstinence to be unsustainable.

Given the importance of sex within the marriage relationship, I suggest that any legal arrangement that is entered by a couple with no intention of sexual consummation is not marriage in the biblical sense. To this we must add one caveat. Some couples may, for whatever reason, be physically incapable of sexual intercourse. In such cases, the failure to consummate the marriage is not by choice and there would appear to be no reason why the couple cannot enjoy the mutual support and partnership inherent in a legally binding lifelong commitment to one another in marriage. We must also recognise that sexual activity is challenging for some people for psychological reasons, for example due to past trauma, but in such cases the individual should seek help so that sexual intimacy can be restored to its proper place within the marriage relationship. This will require patience, tenderness and prayerful support from the marriage partner.

6. Sex without marriage or procreation

Effective forms of contraception have made this space a real possibility. Their widespread availability since the 1960s (the first oral contraceptive pill was released in 1960) has contributed greatly to the 'sexual revolution' in our culture which separated sexual activity from marriage. Scripture is, however, clear that the proper context for sex is within marriage.

7. Procreation without sex or marriage

This space is now possible because of modern technology. A single woman may have a child using her own egg and donated sperm, either using artificial insemination or in vitro fertilisation. A same-sex couple may have a child using one partner's gamete and a donated gamete of the other sex, although male same-sex couples will require a surrogate to carry the baby through pregnancy. The legal right of same-sex couples to be recognised as parents of children conceived using donated sperm and born through a surrogate was enshrined in UK Law in the Human Fertilisation and Embryology Act of 2008.[32] From a Christian perspective none of these approaches is morally acceptable since the proper context for procreation is marriage which is the lifelong commitment of a man and a woman to one another in the eyes of others (in our context this involves a legal dimension) and of God.

Christians ought to have a distinctive perspective on procreation. Christian ethicist Gilbert Meilaender captures this well:[33]

> At least for Christians, procreation is primarily neither the exercise of a right nor a means of self-fulfillment. It is, by God's blessing, the internal fruition of the act of love and it is a task undertaken at God's command for the sustaining of human life.

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[31] The relevant legislation is accessible online at: http://www.legislation.gov.uk/ukpga/1973/18#section-12.

[32] This Act, which amended the earlier HFE Act of 1990, is available online: https://www.legislation.gov.uk/ukpga/2008/22/contents.

[33] Gilbert Meilaender, *Bioethics: A Primer for Christians* (1996, Paternoster)

Procreation is a partnership between God and human beings. We must resist temptations to seize sole control of the process or to neglect our accountability to God in it. Few issues in life require more careful and prayerful thought than family planning. The Christian couple sets the desire for children in the wider context of God's call into His mission and work in the world. Birth control should never be used selfishly but as part of a commitment to honour God in all of life.

5.4 Motherhood and nurture

A mother's bond with her child is unique. She sustains the child's life from fertilisation throughout its natural life in various ways:

- The cytoplasm of the egg provides the initial stores of energy the zygote needs to undergo division and the mother's mitochondria contained in the cytoplasm are the factories that produce energy from these stores.
- After implantation the embryo begins to derive nourishment directly from the blood supply of the mother present in the lining of the womb.
- Once the placenta develops, it conveys nutrition from the mother's blood supply into the baby's distinct blood supply, supporting the baby's life throughout the remainder of the pregnancy.
- After birth, under natural circumstances the baby is fed by the mother's breast milk until weaned onto solid foods at an age that is highly variable depending on cultural and familial norms. Although there may be situations where this is impossible or supplements are needed, this is the natural means of nourishment.
- Even after the child is weaned and receives its nutrition from food other than maternal milk, the energy that powers its cells is still generated by the mitochondria inherited from its mother.

This account of maternal nourishment reinforces what I have already said about the continuity of human development from fertilisation until adulthood. Implantation and birth do not mark changes in the essential nature of the developing human; they are changes in the way in which the mother sustains the life of her child. The centrality of nurture in motherhood also adds to our reasons for concern about egg donation and surrogacy.

The use of a donor egg breaks this continuum, since the mitochondria and energy stores come not from the birth mother but from the egg donor. The egg donor is not, therefore, simply the baby's genetic mother; she has also played a short-lived but essential role in nurturing its life in its first days and in enabling the individual to continue to generate energy from its food throughout its life.

Likewise, a surrogate mother is not simply the provider of a convenient chamber in which to house the developing baby; she is also truly a mother because she gives birth to a baby she has nurtured for most of the preceding nine months after the energy supplies in the egg cell are depleted. Adoption, use of a 'wet nurse' and use of formula milk all change the pattern of maternal support to the child, but they are compassionate responses to something that goes wrong with the natural process. To break the natural process intentionally by choice through egg donation or surrogacy is in a different moral category.

5.5 Four essential principles

5.6 Infertility treatments

The implications of a Christian worldview for the ethics of birth control and IVF will be discussed at some length

later in this paper. At this point, however, we can draw some conclusions concerning other infertility treatments, including artificial insemination (AI), gamete intra-fallopian transfer (GIFT), intra-uterine insemination (IUI) and medical and surgical treatments. Infertility is, ultimately, a result of the Fall, a consequence of living in a world marred by sin's effects. Disease and dysfunction can affect every organ system, including the reproductive system. There is no biblical basis for claiming that specific cases of subfertility result from specific sins. The Lord Jesus rejected this kind of thinking.[34] but there is every biblical reason to look for the opportunity within the experience of infertility (as in every painful experience) to grow in faith and in Christ-like character.

As with any physical affliction caused indirectly by the Fall, it is legitimate to seek help from God through both praying for supernatural intervention and through seeking medical assistance. So long as the help offered by doctors does not violate any other ethical principles it is not wrong or a compromise of faith to accept it. Therefore, the use of drugs and surgery to treat infertility is not ethically questionable. They should be seen as gifts from God via the creative ability of people He created. Forms of assisted conception in which fertilisation occurs within the mother's body (including AI, IUI and GIFT) are also, I would argue, ethically acceptable so long as the sperm used belong to the husband of the woman being inseminated (the use of donor sperm would mean that the child would not actually be the husband's). Some Christians may struggle with the fact that the sperm used in these procedures have been collected through masturbation. It is perfectly possible, however, for his wife to be involved in this process and for him to avoid any sin (for example the use of pornographic material). I believe this to be acceptable on the basis that Scripture allows for a range of forms of sexual expression between husband and wife, not simply penetrative intercourse.[35] In other words, the process of collecting sperm can actually be part of the loving union of the man and his wife meaning that marriage, sex and procreation have been held together as intended by God.

5.7 What kind of society?

A final dimension of the Christian perspective on procreation relates to the kind of society we want to live in. The eugenics movement began with the ideas of Francis Galton (1822-1911) that humankind can progress to a purer status by giving a 'helping hand' to the natural process of evolution has. Historically this goal was pursued in Britain, the USA and Germany through selective breeding and sterilisation (or even elimination) of those whose traits were 'undesirable'. The realisation of just how far Nazi Germany pushed this process during World War 2 caused a reaction against eugenics programmes in countries that had not gone so far. Now, however, it is possible to advance the same aims through selective destruction of 'defective' embryos, selective abortion of fetuses with disabilities, and genetic engineering to enhance the genes of an embryo. This reality raises two vital questions:

What is the nature of parental love?

Most loving relationships between people – friendship and romantic attachment – are based on choice. Parental love is different. As I have said above, it is a uniquely unconditional love. Couples may choose to try to have children and may seek assistance to increase their chances of having children, but they should not choose the children they receive. They should, instead, accept them as strangers and love them without conditions. This

[34] See Luke 13:1-5;

[35] The Song of Songs almost certainly describes other forms of sexual activity in figurative terms. I do not, however, believe that the ran ge of acceptable sexual acts is limitless, with anal penetration, for example, being unnatural. A more complete discussion of biblical sex ual ethics ranges beyond the scope of this article. The reader is referred to the author's article on the subject, available on his website: www.paulcoulter.net/ethics.

principle is especially important for Christians because parental love is one of two images of God's love for us (the other being marriage). In the ideal situation, children in Christian homes learn about God's love for them through the love their parents show them (and the love their parents have for one another). Introducing choice into parenthood changes this dynamic. If a couple are willing to consider an abortion under some circumstances or only to accept embryos with desirable traits, they can no longer claim to have unconditional love for their children, including those who they choose to keep. The consequences for society and for if this becomes established as the norm are profound. There is no longer the possibility of the secure attachment that has been shown to be so beneficial for psychological development.

Christians understand that we are stewards of our procreative potential. We are not, however, possessors, or even stewards, of the children that result from procreation. They are human persons along with us, standing in direct relationship to God and the rest of humankind from conception through childhood into adulthood. Parents decide to try to conceive children and have responsibilities to nurture, protect, discipline and teach children they receive, but they do not have the right to determine whether those children, once conceived, can live. An embryo in the laboratory is not the property of the parents or the scientists and the embryo in the mother's womb is not part of her body.

Parenthood, then, is not a right to be pursued by any and every means. Christian parents recognise that their child has emerged from themselves – genetically from both parents and also physically from the mother – but has also been received from above. They have conceived life, but their child's identity is distinct from them. Parenthood embraces the child, despite its imperfections, in an unconditional love which comes closest among human loves to the unmerited love of our heavenly Father. Introducing choice into procreation violates this unconditional nature of parental love. It turns the parable of God's grace embrace into an enactment of the false religion of merit. A child who was chosen from among several or who might have been aborted if the timing were not right or he had a disability is loved not because he simply is but because he met the criteria his parents set.

Donor gametes or a donor womb (surrogacy) reflects a drive to have children by any means that does not come from faith in God. Additionally, donor gametes introduce a third (perhaps even a fourth) person into the equation. The child is not a product of the union of the man and wife. The couple who intend to raise the child become the 'commissioning couple'.[36] They have decided upon the 'product' they want and have commissioned others to supply it. This is a profound shift from the ideal of unconditional parental love for a child produced from their own gametes and womb in the context of a loving marriage. Furthermore, the line of inheritance with the donor or donors has been broken. They have produced a baby with whom they will have no loving bond and who is simply an object to be passed to another person or couple. For these reasons, I suggest that surrogacy and donor gametes fall outside God's purposes.

I suggest, also, that it is not given to us to manipulate the DNA of human beings to enhance their traits, since this violates the principle of unconditional parental love. A related question is whether technology should be used to screen sperm and eggs for healthiness. This is different than eliminating individuals who have already been conceived or manipulating DNA and so may not be ethically problematic.

Would a society without weak people be better?

[36] The phrase 'commissioning couple' was used in an earlier version of HFEA guidelines around surrogacy.

The idea of eliminating disease and disability may seem attractive. Indeed, societies put immense resources into measures to prevent and treat diseases and to correct disabilities or lessen their impact on the lives of disabled people. To modern people, this may seem to be obviously the right thing to do, but it rests on principles of the worth and rights of individuals that originally derived from Christianity and that are not obvious within other worldviews. Christian ethics rest, as argued above, on the foundational principle that every human person has a value that is intrinsic and inalienable. We also recognise that compassion reflects the likeness of God. For this reason, the Bible forbids favouritism within Christian communities (James 2:9) and commands special honour to be shown to those who are weaker (1 Corinthians 12:24-26). Recognising that human life begins at conception, these principles must extend to unborn children.

The Law given by God to Israel through Moses enshrined the principle of social justice and God judged Israel on the basis of how they treated foreigners and vulnerable people, including widows and orphans. The New Testament also condemns those who take advantage of others from a position of greater wealth and power (James 5:1-6). From a Christian perspective, then, a society's righteousness is not based on the degree to which weakness is eliminated, but how the most vulnerable are treated. Christians should be committed to relieving suffering and its causes, but must never agree to eliminating people (born or unborn) who are weak and prone to suffering.

5.8 Conclusion: A proposed Christian position on family planning

I have established some principles so far in this paper that influence a Christian view on family planning:

a) A new human person is created at fertilisation who bears God's image and has a right to life.

b) God intended marriage between a man and a woman to be the context for procreation.

c) Married couples are entrusted by God as stewards of their potential to procreate.

d) Within marriage, sex is given not only for procreation, but also to express love and for pleasure.

e) A child born to a couple should be genetically the child of both the man and the woman.

f) Motherhood entails the nurture of the developing child from fertilisation throughout life.

g) A healthy society is founded on unconditional parental love and honouring the weakest.

h) A child's attributes should not be selected by parents.

These principles mean that:

- The process of bringing new human life into the world is an act of procreation that carries on God's work of God in response to His command to the human race to multiply and subdue the earth.
- The command to multiply does not mean that every couple should seek to have as many children as physically possible but that we must exercise God-honouring stewardship of our procreative potential in a way that promotes the fulfillment of God's mission in His world. Each generation must ensure the survival of humankind but each individual must be faithful to God's specific calling on his or her life, whether to singleness or marriage, to parenthood or to remaining childless.
- It is legitimate for human beings to use their God-given creativity to find ways to overcome the effects of sin and life in a sinful world on the human body. This includes seeking ways to overcome infertility.
- Children are a gift from God, but childlessness does not imply lack of blessing from him. Children represent

the result of the bond of sacrificial love inherent in marriage and procreation is intended to occur within this context. Any approach to overcoming infertility that requires the use of gametes from or the womb of a third party goes outside this relationship and is, therefore, not acceptable.

- Life begins at conception, when the genes of two family lines combine to create a new genetic code that has never before been seen in the history of the world. From this point, the embryo should be respected as 'one of us' and afforded the same degree of protection as a child or adult. Destruction of embryos is morally equivalent to murder.
- Many fertilised embryos fail to implant in the natural course of events, but that does not justify deliberately preventing embryos that may otherwise have implanted from doing so. To do so is morally equivalent to murder.
- Any action that deliberately ends the life of a baby in the womb at any stage of pregnancy is morally equivalent to murder, with the possible exception when it is necessary to save the mother's life.
- The use of embryos or their cells in research or therapeutic procedures is morally equivalent to taking tissues from a child or adult for these purposes without consent.
- Human personhood is not based on self-awareness or attainment of a certain stage of development but upon being a genetically unique member of the human race. It is not for any human being to judge the life of any another to be not worth living or of less value than others.
- Parental love is intended to be unconditional. Children must never be objectified (seen as a right) or selected (e.g., designer babies or abortion on the basis of a trait in the baby).
- Societies are judged by the way they treat their weakest members and any attempt to create a superior society by eliminating weaker individuals (either before or after birth) is immoral.

6. Abortion

6.1 What is abortion?

Abortion is the deliberate ending of an established pregnancy (i.e., after the embryo has implanted in the mother's womb) resulting in the death of the unborn child. In medical usage, the term 'spontaneous abortion' is also used to describe cases in which the baby is lost unintentionally (i.e., miscarriages), but the common usage of the unqualified word 'abortion' means the deliberate killing of the unborn child. The terminology 'termination of pregnancy' is often preferred by people who perform abortions and support the concept, but it is a misleading euphemism as it sidesteps the fact that the baby is being killed.

Abortions take two forms:

a) *Medical abortion* –the mother takes a drug (an abortifacient) or combination of drugs with the intention of killing the baby and causing it to be expelled from the womb.

b) *Surgical abortion* – the woman's cervix is dilated and the baby is removed from the mother's womb either using suction (between 7 and 15 weeks) or using surgical instruments (after 15 weeks). This often involves the dismembering of the baby's body.

The type of abortion recommended to a woman in any given situation will depend on the stage of her pregnancy, the facilities available and the woman's preference. According to the NHS Choices website, "Most abortions

(90%) are carried out before 13 weeks and virtually all (98%) are performed before 20 weeks. The earlier an abortion is carried out, the easier and safer the procedure is to perform".[37] Of course, the phrase 'safer' refers only to the mother. Abortion is, by definition, never 'safe' for the baby. An abortion carried out between 20 and 24 weeks is described as a 'late abortion'. In practice, most hospitals and clinics in the UK do not perform abortions beyond 18 to 20 weeks except in exceptional circumstances.

Some anti-abortion campaigners use graphic descriptions and images of abortions to shock people into recognising the realities of what happens. Personally, I am uncomfortable with such shock tactics and prefer to avoid use of such images to honour the dead babies, but I share the concern of those campaigners that information provided about abortion by providers it is often misleading and unclear, deliberately avoiding discussing what happens to the baby. On the NHS website, for example, it speaks of "the pregnancy" being removed from the womb.[38] But a pregnancy is a state of being and what is removed is a unique human being. If a woman would be shocked by an image of an aborted fetus why would she even consider having an abortion? It is vitally important that people realise the truth about abortion – that is kills innocent human beings in a horrific and undignified way, without pain relief, often dismembering their bodies and without giving their remains the dignity of burial. When abortion is described as 'safe' and as 'healthcare', consideration is only being given to one of the two individuals it affects. By definition is it not 'safe' for the baby or caring for its health.

6.2 2016 statistics for abortion in England and Wales

The following statistics for abortion in are taken from an official Department of Health report on abortion in England and Wales in 2016:[39]

- The total number of abortions was 190,406, down slightly from 2015, but up 8.5% from 2000, when it was 175,542.
- The rate of abortions was 16.0 per 1,000 resident women aged 15-44, unchanged from 2015, but lower than in 2006, when it was 17.6.
- Rates vary considerably by age of women, being higher for younger age groups and highest (27.9 per 1,000) for women aged 22.
- The under-16 abortion rate was 1.7 per 1,000 women (a welcome decrease from 3.9 per 1000 in 2006) and the under-18 rate was 8.9 per 1,000 women (also a welcome decrease since 2006, when it was 18.2 per 1000).
- 98% of abortions were funded by the NHS. Over two thirds (68%) took place in the independent sector under NHS contract.
- 92% of abortions were carried out below 13 weeks gestation. 81% were at under 10 weeks, compared to 68% in 2006 and 58% in 2000.
- 'Medical' abortions (i.e., caused by drugs rather than surgery) accounted for 62% of the total, up from 30% in 2006 and 12% in 2000.
- 38% of abortions were for women who have had at least one previous abortion.

[37] www.nhs.uk/Conditions/Abortion/.
[38] https://www.nhs.uk/conditions/abortion/what-happens/
[39] *Abortion Statistics, England and Wales: 2016* (2018, National Statistics / Department of Health), available online at https://www.gov.uk/government/statistics/report-on-abortion-statistics-in-england-and-wales-for-2016.

6.3 Legal bases for abortion

The key piece of legislation concerning abortion in England and Wales is the Abortion Act, 1967. Strictly speaking, this Act did not legalise abortion, but it did lay out a set of circumstances in which abortion is not treated as a criminal offence. The Act specifies that induced abortions in England and Wales must be certified by two registered medical practitioners as being justified under one or more of the following grounds:

A the continuance of the pregnancy would involve risk to the life of the pregnant woman greater than if the pregnancy were terminated (Abortion Act, 1967 as amended, section 1(1)(c))

B the termination is necessary to prevent grave permanent injury to the physical or mental health of the pregnant woman (section 1(1)(b))

C the pregnancy has not exceeded its twenty-fourth week [40] and that the continuance of the pregnancy would involve risk, greater than if the pregnancy were terminated, of injury to the physical or mental health of the pregnant woman (section 1(1)(a))

D the pregnancy has not exceeded its twenty-fourth week and that the continuance of the pregnancy would involve risk, greater than if the pregnancy were terminated, of injury to the physical or mental health of any existing children of the family of the pregnant woman (section 1(1)(a))

E there is a substantial risk that if the child were born it would suffer from such physical or mental abnormalities as to be seriously handicapped (section 1(1)(d))

Or, in an emergency, certified by the operating practitioner as immediately necessary:

F to save the life of the pregnant woman (section 1(4))

G to prevent grave permanent injury to the physical or mental health of the pregnant woman (section 1(4))

The architects of the 1967 Abortion Act did not intend it to allow for elective abortion on request, but poor wording in the legislation means that is what is available. A woman need only convince two doctors that her mental health would be better if the baby was aborted than it would be if the pregnancy continued. Since this criterion is highly subjective and dependent entirely on what the woman says, it is unlikely that a woman would be unable to secure an abortion if she wants it.

In 2016, the numbers and percentages of abortions in England and Wales undertaken under each of the legally acceptable grounds was as follows: [41]

A and B	Less than 0.25% (246)
C	97% (180,794)
D	1% (1,342)
E	2% (3,208)
F and G	Extremely rare (6)

The proportion of ground C abortions has risen steadily over time, with a corresponding reduction in ground D cases. The vast majority (99.8%) of ground C terminations were performed because of a risk to the woman's mental health. This is the category that includes abortions that are chosen by the woman for social reasons, although justified in paperwork on the grounds of her mental well-being.

[40] The original Act of 1967 said twentieth-eighth week, but this was amended in 1990 in the Human Fertilisation and Embr yology Act.

[41] *Abortion Statistics, England and Wales: 2016* (2018, National Statistics / Department of Health), available online at https://www.gov.uk/government/statistics/report-on-abortion-statistics-in-england-and-wales-for-2016.

6.4 A Christian position on abortion

The overwhelming consensus position among Christians throughout history has been opposition to abortion. Abortion was widely accepted in the Roman world (as was infanticide, especially of girls) and the Christian rejection of the practice contributed to the rapid numerical growth of Christianity, since many of the children of Christians followed in their parents' faith. Early Christians responded compassionately to the abandonment of unwanted babies by taking them into their families, and it was Christian influence that eventually led to infanticide and abortion being outlawed in the Roman Empire.

Recognising that life begins at fertilization and every life is sacred before God, we must conclude that abortion is morally equivalent to murder. The law may make a distinction between the status of a fetus prior to and after 24 weeks, but that point is arbitrary since it is no longer the lower limit of viability and does not mark any genuine distinction in developmental terms. A Christian must accept that there is no difference between the value and status of a fetus before and after this or any other point in pregnancy.

6.5 Possible exceptions to the rule?

There are three situations in which people who would otherwise not support abortion sometimes claim it might be acceptable. These 'hard cases' are:

To save the mother's life

If the mother dies before the baby is able to be delivered alive, the result will be death for both child and mother. If continuing with a pregnancy places the mother at a high risk of death, then, the only way to save the mother's life may seem to be to end the pregnancy. If the baby is not yet viable, the inevitable result may be the baby's death. Yet this is the 'lesser of two evils'. A life is saved through an action that would not otherwise be acceptable. In such rare circumstances, ending the pregnancy must be the last course of action after all other options have been exhausted. If it is necessary to end the pregnancy, every effort should be made to induce labour or to perform a caesarian section to deliver the baby intact and alive. It should then be given palliative care to ensure that whatever brief life is possible outside the womb has the greatest possible dignity. Only if these options are impossible may it be necessary to end the baby's life prior to delivery.

When the baby is believed to have a serious disease

When we recognise that unborn children have an inalienable right to life, there can be no basis for accepting disease or disability in the baby as a basis for abortion. If it would be unacceptable to euthanise an individual with this disease after birth, it should not be acceptable to kill the individual in the womb. We must ask who has the right to decide which lives are not worth living. The reality is that every life carries a burden of suffering and that every individual will die eventually. The only questions are how great a degree of suffering or how short a death is unacceptable. The compassionate and moral response to these issues is to allow these babies, like every other human being, to live out their lives until their natural deaths and to care for them throughout those lives. This recognizes their dignity and maximises the dignity of the parents in their love for their children. Another concern with this potential ground for abortion is that it assumes that there is a certain diagnosis of disease in the baby. Yet this is simply not possible. Any medical diagnosis is based on an interpretation of findings which may be wrong. This practical issue is, however, secondary to the fact that the baby has a right to life irrespective

of its disability or disease.

When a pregnancy arose from rape or incest

Some argue that abortion should be permissible if a pregnancy arose from rape or incest since the baby, although technically innocent, continues to embody the crime against the mother.[42] But killing an innocent individual does not in any sense make the wrong that has been done to the woman right. The trauma has already been done through the act of rape or incest and the discovery of the pregnancy. Abortion is traumatic to the mother and a grievous wrong to the baby. It does not undo the original act; it merely adds to that wrong another wrong. A mother in this situation will require a great deal of compassionate support. If she cannot cope with keeping the baby, carrying it to term and offering it for adoption should be an option. Considering the right to life of the baby it is, indeed, the only option.

7. Adoption

Information about law around adoption and procedures to adopt a child in the UK are available on the government's information website.[43] Statistics concerning adoptions in the UK are available on the Office for National Statistics website.[44] Studies indicate that adoption has decreased significantly since abortion became legally available.[45] Sadly, adoption rates continue to fall in the UK, despite increased numbers of children being taken into care.[46]

There is no biblical reason to oppose adoption. Indeed, the New Testament description of salvation in terms of adoption as God's children and heirs makes it a noble act and emphasises its potential to provide hope and a new beginning for a child. Adoption does not reflect God's ideal of maintaining genetic inheritance within successive generations of one family, but it is not like the use of donor gametes, which intentionally breaks the link between genetic inheritance and parenthood, adoption is a compassionate response to a tragedy (when the birth parents are dead) or of a failure on the part of the birth parents to care for their child. The child is innocent, and the adoptive parents can help to bring restoration.

Adoption should be understood primarily as a way of caring for the disadvantaged rather than a determined effort for infertile parents to fulfil their desire to have a child. Christians considering adoption must refrain from choosing the most suitable baby in order not to objectify the child. Adoption offers an alternative for childless couples who decide they cannot accept IVF or who refuse to use donor gametes. Assisted conception and donor gamete use reflect an individualistic view of procreation, but adoption expresses a communal view that finds a rich theological basis in Scripture.

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[42] This is Gilbert Meilaender's argument in *Bioethics: A Primer for Christians* (1996, Paternoster), p.36

[43] https://www.gov.uk/child-adoption.

[44] https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/adoption.

[45] Bitler, Marianne and Madeline Zavodny. 2002. 'Did Abortion Legalization Reduce the Number Of Unwanted Children? E vidence from Adoptions', *Perspectives on Sexual and Reproductive Health*, 34(1): 25-33. Available online at: http://www.guttmacher.org/pubs/journals/3402502.html.

[46] http://www.bbc.co.uk/news/uk-england-41427209.

8. Contraception

The development of reliable forms of contraception has had a profound impact on society. The removal of any significant risk of pregnancy from sexual intercourse was a major factor in allowing the sexual revolution, which separated sex from marriage, to occur. We could consider the societal consequences and deem many of them to be negative, but that line of reasoning cannot form the basis for an absolute opposition to contraception in all circumstances. The misuse of a medical development cannot be a reason to reject it outright. Consider diamorphine. It is a highly effective form of pain relief, but it causes untold suffering and social harm when misused under its alternative name heroine. Similarly, the fact that motor cars result in some fatalities does not mean that we should never drive. In considering the ethics of contraception, we must take account of the various forms of contraceptives and remember what I have already established: that birth control can be legitimate within marriage as part of a couple's stewardship of their procreational potential, so long as it does not result in the death of unborn children (embryos or fetuses).

8.1 Contraception versus contragestion

Contraception means literally 'against conception'. In other words, contraceptives prevent the egg and sperm from meeting. Despite this literal meaning, the term contraception is commonly used to describe both methods that work in this way and also methods that prevent embryos implanting in the lining of the womb. That mechanism should properly be called contragestion, meaning literally 'against pregnancy', although that term does not have widespread currency. These distinct mechanisms are seldom made clear in advice available online, including from the NHS. It is assumed that there is no ethical question surrounding either. I have argued already that contraception is not morally problematic for Christians provided it is used within a loving marriage and as an expression of the stewardship of the couple's procreative potential. Contragestion, however, is morally problematic, since the embryo is a living human person.

Critics of my position against contragestion have argued that it is unsustainable because, given some estimates of the rate of failure of naturally conceived embryos to implant in the womb, the majority of the human race may have died before pregnancy was even established.[47] Whatever the statistics around failures of implantation, something that happens naturally cannot provide a basis for making the same thing happen intentionally. Every individual will die eventually, but that does not mean that we can decide to kill some prematurely. There is an important ethical difference between human actions that actively prevent the possibility of implantation of embryos and the recognition that many fertilised embryos do not implant and are lost 'naturally'. The existence of imperfections and disease in the world cannot provide a basis for humankind to act in ways that make the world less perfect. We should use our powers to improve human health and well-being, but we should not act intentionally to kill human beings even in the earliest stages of development.

8.2 Mechanism of action

Given the ethical distinction between contraception and contragestion, it is vital to know how different forms of birth control work so that couples can choose only to use those which are solely contraceptive. The following table lists some forms of birth control, briefly describes their mode of action and indicates whether they work

[47] Some critics of Christians who maintain that life begins at fertilisation argue that Heaven will be full of people who never lived outside the womb. This is a nonsense argument. Heaven can never be 'full'; it has enough capacity for all those God will bring to it.

through contraception or contragestion or both. A tick indicates a definite form of action, whereas a question mark indicates a disputed method of action.

Method	How it works	Contraception	Contragestion
Sterilisation			
Male sterilisation	The vas deferens, which carries sperm from the testes to the urethra, is cut or blocked in a procedure that is often irreversible. Ultrasound is also being investigated as a possible reversible way to inhibit sperm formation in the testes.	✓	
Female sterilisation	The oviduct, which carries the egg from ovary to uterus, is tied or cut. This is generally irreversible.	✓	
Natural methods			
Abstinence	If practiced faithfully this is a 100% certain way to avoid pregnancy.	✓	
Coitus interruptus	The man withdraws his penis from the woman's vagina prior to ejaculation.	✓	
Lactational	Prolonged breast feeding of a previous child to sustain the production of progesterone in the mother's body, which stops ovulation and associated menstrual periods.	✓	**?**
Fertility awareness	Timing sexual intercourse to avoid times when the woman is most fertile. This may involve measuring body temperature, checking the consistency of cervical mucus, and recording dates between menstrual periods.	✓	
Barrier methods			
Condom (male or female)	A physical barrier used by the man over his penis or by the woman inside her vagina. Prevents sperm from entering the uterus and reaching the egg.	✓	
Caps and Diaphragms	Different sizes and shapes of barriers that can be inserted by a woman into her vagina and positioned over the cervix prior to sex to prevent sperm from reaching her womb.	✓	
Spermicidal agents	Generally used along with barrier methods to increase their effectiveness. Act by killing sperm.	✓	
Hormonal methods			
Combined oral contraceptive pill	A daily tablet that contains two hormones (oestrogen and progestogen) that work together to prevent ovulation (stopping the release of an egg) and to thicken cervical mucus (making it harder for sperm to enter the womb). May also reduce the likelihood that an embryo will implant by thinning the lining of the womb.	✓	✓
Progestogen only pill (mini-pill)	A daily tablet that only contains one hormone (progestogen) which thickens cervical mucus and thins the lining of the womb. In some cases it can also prevent ovulation (release of an egg).	✓	✓
Contraceptive injections, implants and patches	Alternative ways of getting a progestogen (and oestrogen in the case of the patch) into the woman's body. The mechanism of action is the same as the oral forms of the hormones.	✓	✓
'Emergency contraception' or 'morning after pill'	An oral tablet intended for use after unprotected sex as a means of preventing pregnancy. Several drugs can be used for this purpose.[48] The exact mechanism of action is not clear. It is likely that in most cases they act by preventing ovulation (release of an egg), but they can also work by	✓	✓

[48] The same drugs (e.g. mifepristone) can often be used in higher doses after pregnancy is established as abortifacients (dr ugs intended to induce an abortion).

	preventing implantation of an embryo.		
Vaginal ring	A ring inserted in the vagina between a woman's periods which releases the hormones oestrogen and progestogen. These work in the same way as the combined pill.	✓	✓
Intra-uterine methods			
Intra-uterine device (coil)	A device placed into the womb by a health professional. It can be left there for years at a time. Works by killing sperm and preventing implantation of embryos. The intra-uterine device can also be used as a form of 'emergency contraception'.	✓	✓
Intra-uterine system	Similar to the intra-uterine device but with the addition of the hormone progestogen. It works in the same ways as both the intra-uterine device and the progestogen-only pill.	✓	✓

The above table indicates that all hormonal forms of birth control have potentially both a contraceptive and a contragestive effect. Some Christian doctors argue on the basis that the combined oral contraceptive pill almost always prevents ovulation, at least when taken reliably, that it is ethically acceptable.[49] I do not agree, because the secondary mechanism of action is well established: if ovulation is not suppressed, the mechanism of action may be preventing an embryo from implanting, resulting in its death. There may, however, be an exception in the case of one form of hormonal birth control. One well-researched pro-life guide to contraception suggests that injections of a hormonal contraceptive called Depo-Provera with a greater frequency than normal can reliably prevent ovulation in every menstrual cycle, removing the risk of this secondary mechanism altogether.[50] Some Christian couples may decide that this is acceptable.

It is also important to recognise that the oral contraceptive pill can be used for medical purposes to treat gynaecological problems. This should not be problematic for a Christian woman. The ethical principle of 'double effect', states that an action that is not in itself ethically wrong – such as taking the pill – but may have a result that is ethically undesirable – in this case, preventing implantation of an embryo – can be justified if it is undertaken for the purpose of another effect that is ethically desirable – in this case to reuce pain and blood loss during periods.[51] A parallel situation would be the administration of pain relief to a dying person with the intention of alleviating their suffering in the knowledge that it may also hasten their death. If a sexually active woman is using the pill for medical reasons and she is particularly concerned about its contragestive potential she and her husband may wish to add a barrier or natural form of contraception.

8.3 What about lactational birth control?

In the table above, a question mark has been placed in the 'contragestive' column beside lactational birth control, that is prevention of pregnancy through breastfeeding. In general, this method works through preventing ovulation, but there are some suggestions that it may also prevent implantation of embryos by thinning the lining of the womb. Some opponents of Christian arguments against contragestion point to this effect as evidence that nature itself includes a contragestive means of birth control. Am I hypocritical in arguing against the pill when God has designed a system in which contragestion occurs when a mother is breast feeding?

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[49] See Professor John Guillebaud's 2003 article entitled 'When do contraceptives work?' on the Christian Medical Fellowship Website: http://www.cmf.org.uk/publications/content.asp?context=article&id=1143.

[50] Hotonu, O.E.O. (2005) Contraception: a pro-life guide. Newcastle Upon Tyne: Christian Institute.

[51] The same principle underlies the Pope's verdict in 2010 that it may be acceptable for people to use condoms in situations where this will prevent the spread of sexually transmitted infections such as HIV. The Roman Catholic Church has not changed its opposition to contraception, but the principle of double effect underlies the verdict that condom use may be acceptable in exceptional circumstances because of the benefit of preventing diseases such as AIDS.

Even if lactation causes a contragestive effect it cannot be equated with the use of medications with the same effect for two reasons. Firstly, the principle of double effect may be applied once again. The mother is not breast feeding for the primary purpose of birth control but because of the positive benefits of breast feeding for the baby. Secondly, as I said earlier about embryos failing to implant naturally, the fact that something happens naturally does not mean it is correct to make it happen deliberately. Since breast feeding is a natural process and the hormonal changes it entails were designed by God, there is no ethical issue for the Christian woman in breast feeding her babies and appreciating the natural birth control effect this entails.

8.4 Contraceptives for children

Another issue concerning contraception that is often of concern to Christians is the availability of contraceptives to children under the age of 16 (the legal age of consent for sex in the UK). This issue continues to concern parents, since young girls can be given hormonal contraceptives without parental consent and, in some cases, without parental knowledge. Indeed, some schools in England work with NHS Trusts to provide contraceptive implants to children as young as 13.[52]

The legal precedent for providing contraceptives to children under 16 was set in the 1980s through a series of court cases that began in 1982 with a legal challenge brought by Mrs Victoria Gillick against her local health authority.[53] The eventual outcome was a judgement that a child can give consent to medical treatments provided he or she is sufficiently mature to understand the choice and its consequences. Ironically, given that Mrs Gillick objected to children under 16 being deemed to have this capacity, a child who is judged to have capacity to consent is often described as 'Gillick competent'.

Gillick competency has since been used beyond the issue of contraception to apply to consent for many other medical procedures. The specific principles guiding doctors in decisions to prescribe contraceptives to a girl are known as the 'Fraser guidelines', since they were issued by Lord Fraser in 1985. They say that:

> *...a doctor could proceed to give advice and treatment provided he is satisfied in the following criteria:*
> *1) that the girl (although under the age of 16 years of age) will understand his advice;*
> *2) that he cannot persuade her to inform her parents or to allow him to inform the parents that she is seeking contraceptive advice;*
> *3) that she is very likely to continue having sexual intercourse with or without contraceptive treatment;*
> *4) that unless she receives contraceptive advice or treatment her physical or mental health or both are likely to suffer;*
> *5) that her best interests require him to give her contraceptive advice, treatment or both without the parental consent.*

These guidelines clearly state that the child should be encouraged to inform her parents or to allow the doctor to do so but allow for contraceptive advice to be given without parental knowledge if the child does not agree to this. The Fraser Guidelines have subsequently been judged in legal rulings to apply to treatment of sexually transmitted infections and abortions as well as contraception. From a Christian perspective, this situation raises real concerns about State interference in parents' responsibility to educate and give moral guidance to their children. The same tension is evident within sex education.

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[52] http://www.telegraph.co.uk/health/healthnews/9068843/Contraception-row-I-had-implant-because-I-felt-like-having-sex-says-girl-13.html

[53] The reader is referred to the NSPCC fact sheet on these issues which provides a clear summary and is available online at: http://www.nspcc.org.uk/inform/research/questions/gillick_wda61289.html.

9. Research using fetal tissue and embryonic cells

Embryonic stem cells are cells removed from embryos. They are highly attractive to medical scientists because of their ability to differentiate into every type of cell in the body, which means they could potentially be used to treat diseases by regenerating damaged or malformed tissues. All projects using embryonic cells must be registered with and approved by the Human Fertilisation and Embryology Authority (HFEA) and a list of currently approved projects is available on its website.[54]

From a Christian perspective, research using embryos is unacceptable. It is clearly desirable to treat disease, but to do so through a technique that causes embryos to be destroyed (this is unavoidable in the procedures that currently exist) is morally unacceptable. Even if techniques were developed that allowed some cells to be removed for research without killing the embryo, this would still be unacceptable as it would be performed without the knowledge or consent of the individual (the embryo). We must insist that the same principle applies to the embryonic stage of human development. It is possible that cells similar to embryonic stem cells may be able to be produced in future by reprogramming cells from consenting adults, for example from the skin. Stem cells can also be harvested from the umbilical cord blood of babies at birth. Use of such cells provides an alternative to use of embryos and is not ethically objectionable for the Christian.

Fetal tissue can also be used in research in the UK, so long as the mother consents, although it is illegal to perform abortions for the purpose of gathering tissues for research. The fact that the mother gives consent does not make this ethically acceptable when we realise that unborn children are people with their own right to life. The baby clearly cannot consent to its tissues being used.

10. *In Vitro* Fertilisation (IVF)

In vitro fertilisation (literally 'fertilisation in glass') is a process in which embryos are produced in the laboratory by introducing sperm to an egg before being implanted in the womb of a woman in the hope that a pregnancy will be established, leading ultimately to a live birth. Embryos created in a lab can also be frozen and stored for later use. The process from harvesting of the woman's eggs through to implantation of an embryo is known as a 'cycle' of IVF. The woman must undergo hormonal treatment to enable her fertile eggs to be harvested and to prepare her body for implantation of the embryo or embryos. The sperm and eggs may come from the couple who intend to raise the child or be donated by other individuals. A variation within IVF treatment is when an individual sperm is injected into the egg – a procedure known as intra-cytoplasmic sperm injection (ICSI). It increases the likelihood of fertilisation, especially in cases of male infertility is a major factor and due to poor sperm quality.

Guidelines from the National Institute for Health and Care Excellence (NICE) in Great Britain say that up to three cycles of IVF should be offered to women aged under 40 who have been trying unsuccessfully to become pregnant for two years or have not been able to become pregnant after repeated attempts at artificial

[54] https://www.hfea.gov.uk/donation/donors/donating-to-research/embryo-research-project-summaries/

insemination.[55] In practice, provision for IVF is variable depending on the local Trust.[56] Despite increasing live birth rates from IVF cycles with the refinement of techniques, the success rate from IVF remains as low as 23%, meaning that pver three quarters of cycles do not result in a live birth.[57]

In 2018, the average birth rate per embryo transferred for all IVF patients was 23% and rates have steadily increased over time for all patients aged under 43.

Ethical issues confronting Christians when considering IVF fall into three categories:

1. *Relationships* – how are the parents related to one another and to the embryo?
2. *Embryos* – how are these treated and are they ever destroyed?
3. *System* – can we support a system in which embryos are destroyed and experimented upon?

I will consider each of these in turn.

10.1 Issues concerning relationships

It is quite possible that a baby conceived through IVF is the result of a loving marriage, with the sperm and egg coming from a man and woman who intend to care for and nurture it. This is consistent with God's intended purpose for procreation. If donor gametes are used, an additional partner has been introduced and the line of genetic inheritance has been broken. The baby has, arguably, become an object to fulfill the couple's desire for children. I have argued above that the use of donor gametes is, therefore, unacceptable.

Another complicating factor may be the temptation to ensure that the baby that results from IVF is as healthy, strong or intelligent as possible.[58] In the natural course, with conception through sexual intercourse, this cannot be controlled. Conception *in vitro*, however, allows additional selection of gametes or even embryos based on their fitness and (with increasing technological advances) potentially for certain physical attributes, whether the absence of defective genes or the presence of desired traits.[59] This raises the possibility of a 'designer baby' and entails a degree of human control over the process that is not normally present in nature. Christian couples should seek to minimise such control, avoiding the objectification of the baby and acknowledging God's sovereignty over procreation. God has given us free choice over many matters in our lives, but the nature and attributes of our children does not fall within this category.

It is standard practice for IVF clinics to carry out some degree of selection of gametes and embryos and I am unsure whether they would be happy to proceed without any checks. Some Christians may decide that this makes IVF problematic for them. Others may decide that they can proceed with the procedure but ask for selection to be kept to a minimum, focused on maximising the likelihood of successful conception and not selecting traits in the child. Some Christians may even decide that the whole process of IVF introduces a degree of control with which they are uncomfortable and so reject it.

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[55] https://www.nice.org.uk/guidance/cg156/ifp/chapter/in-vitro-fertilisation
[56] www.nhs.uk/Conditions/Infertility/Pages/Treatment.aspx; http://www.bbc.co.uk/news/health-13670615
[57] https://www.hfea.gov.uk/about-us/publications/research-and-data/fertility-treatment-2018-trends-and-figures/
[58] The Law still recognises some aspects of the choice that IVF allows as problematic. For instance, the Human Fertilisation and Embryology Act 2008 bans the selection of sex of an embryo for social reasons.
[59] For more details about the current scientific possibilities surrounding genetic testing and selection of embryos see the H FEA webpage on the subject at: https://www.hfea.gov.uk/treatments/embryo-testing-and-treatments-for-disease/.

10.2 Issues concerning use of embryos

Another important dimension of IVF for Christian couples how embryos are used. Clinics commonly fertilise more eggs than they implant in one cycle, keeping the additional embryos for implantation at a later stage. If there is a successful pregnancy in the first cycle, the other embryos may then be destroyed or used in research, which is problematic for those who recognise each embryo as a unique human individual with a right to life. Christian couples who decide to use IVF should ensure, therefore, that the number of embryos formed is no more than the maximum number of children they could cope with having. They should intend to have every embryo implanted so that each has an opportunity to develop. This may mean having fewer embryos created than if they had no reservations, which could reduce the likelihood of an eventual successful pregnancy (as fewer cycles will be possible) or increase the cost of treatment. Current UK law treats embryos as if they were the property of the couple whose gametes were used to produce them. The couple has control over the number of embryos produced, the length of time for which embryos may be stored and whether they can be donated to other couples or used for research.[60]

Storage of embryos creates other challenges from a Christian perspective. A couple may fully intend to have all their embryos transferred to the woman's womb at a later stage, this cannot be guaranteed, since the woman could die subsequently, the couple may decide against having further children if the first cycle is successful, or the couple may separate. It may, however, be argued that storage of embryos is acceptable so long as the couple fully intend to have them transferred to the womb in future. If this is impossible for any of the reasons suggested above, then these embryos may be donated to another couple, which would be morally equivalent to adoption at the earliest possible stage. Still, some couples may decide not to create more embryos than will be implanted in one cycle to avoid the potential problems with embryo storage.

10.3 Issues concerning the system

A final point for consideration by Christian couples concerning IVF is whether they are happy to be part of the whole system. There are three things to consider.

Firstly, the fact that embryos have been destroyed in the development of IVF technology and continue to be destroyed in the process of refining it. Whether this creates an ethical barrier to using IVF is debatable. We use many materials and technologies in everyday life that have been developed in ethically questionable ways, notably those that emerged from research into weapons. Prayerful discernment is needed to decide at what point a technology becomes unacceptable due to its associations

Secondly, each clinic destroys some embryos for other couples. A Christian couple may feel this makes it problematic for them to use the clinic's services. This line of reasoning becomes very complex, when we consider that all tax-payers help to fund fertility and abortion clinics.

Thirdly, a couple may have concerns about the cost of IVF treatment. Most cycles are not paid for by the NHS and a cycle costs several thousand pounds. This raises the issue of the stewardship of money and some Christians may feel that the hoped-for child is being commoditised by paying for the service. Another dimension of cost is the emotional energy and time invested by the couple. Given the relatively low success rates, this investment is often apparently fruitless, although it may be argued that there is a different kind of spiritual and relational 'fruit' in the shared endeavour of prayerfully working through the process together.

[60] See the HFEA advice at: https://www.hfea.gov.uk/treatments/explore-all-treatments/decisions-to-make-about-your-embryos/

10.4 Conclusion – should Christian couples use IVF?

I do not believe that the use of IVF is a black and white issue ethically. Each couple must make an informed decision as part of their stewardship of their procreative potential before God taking account of the issues I have outlined above. I recommend that they seek pastoral support within a Church community as they reach a decision. They should consider how they feel about the system as a whole and how they will cope together with the pressures of the system as well as insisting that no more embryos are created than they are prepared to implant.

11. Prenatal screening

Prenatal screening involves testing an individual for disease before birth in one of several ways:

a) *Screening embryos* before implantation in the process of IVF.

b) *Ultrasound* to look for abnormalities in the developing fetus in the womb.

c) *Amniocentesis* removes some amniotic fluid from the womb through a needle with the aim of gaining cells from the fetus for analysis. This can identify various abnormalities that cannot be conclusively diagnosed through ultrasound, but carries a risk of miscarriage.

d) *Non-invasive pre-natal testing* (NIPT) is a more recent technique which looks for fragments of DNA from the fetus in a sample of the mother's blood. It can diagnose chromosomal disorders in the foetus, including Downs Syndrome, and does not carry the risk of miscarriage that amniocentesis does.[61]

It is important to distinguish between two different reasons for prenatal screening:

a) *For therapy* – to treat the condition in the womb through surgery or medication, or to prepare to treat the condition immediately after birth. This is ethically unproblematic.

b) *For termination* – if the disease cannot be treated or, even if it can, the test is being performed with a view to terminating the pregnancy or destroying the embryo if a disease is found. This is ethically unacceptable.

Barbara Katz Rothman identifies another problem with prenatal screening when no treatment is possible and abortion is being considered.[62] She points out that even when a mother continues with a pregnancy after having screening with the possibility of termination, the pregnancy becomes tentative and the bond of motherhood becomes provisional, based on passing the test. A dimension of choice that would not normally be experienced has been introduced and parental love has become conditional. Rothman argues that a woman who would consider aborting an ill child is not ready for the challenge of motherhood, since negative screening cannot guarantee that the baby will be born healthy or will not become disabled at some point after birth.

[61] Iceland makes this test available routinely to mothers, 85% of whom chose to take it, and permits late abortions for Down Syndrome, with the result that only a handful of children with the syndrome are born in the country each year. See the report in the Independent from 16 August 2017: https://www.independent.co.uk/life-style/health-and-families/iceland-downs-syndrome-no-children-born-first-country-world-screening-a7895996.html.

[62] Referenced in Gilbert Meilaender, *Bioethics: A Primer for Christians* (1996, Paternoster), p.53

12. Surrogacy

In current UK law, a surrogate is legally the child's mother and her partner (unless he has not consented to her being a surrogate) is its father until the person or couple for whom she is acting as a surrogate is granted parental responsibility by a court.[63] If one or both of the couple she is acting for is the genetic parent of the baby (i.e., donated egg or sperm), this requires a Parental Order. If neither is genetically related to the baby (i.e., both egg and sperm were donated), adoption is necessary. Legally, a woman cannot be paid to be a surrogate in the UK, although she may be given money to cover expenses including travel, clothing and loss of earnings. It is also illegal to advertise oneself as a potential surrogate except through word of mouth. The legal status of a child born through surrogacy is the same as adoption (meaning that the child may later chose to trace its birth mother) but the baby has been commissioned by a couple rather than rescued from a harmful environment. Surrogacy is not, therefore, morally equivalent to adoption.

There are several potential problems with surrogacy. There could be negative psychological impact on the child from discovering that his nurture mother is not his birth mother and on the surrogate mother who gives her child up. More significantly, the child may an 'object' and, if money is paid, a commodity. A woman is bearing a child to satisfy the desires of another person or couple. The child has not two parents, but at least three and, if donor gametes are used, possibly more. I have suggested above that surrogacy falls outside God's purpose for procreation because it severs the link between the marriage bond and child-bearing. It introduces an additional person into the network of parental relationships with the child in a much more direct way than even donor gamete use and intentionally breaks the bond between mother and baby that develops during pregnancy and childbirth.

[63] The legal situation and guidelines surrounding surrogacy may be found at: https://www.hfea.gov.uk/treatments/explore-all-treatments/surrogacy/.

13. WHAT IF …? Dealing with failings and struggles

My intention in writing this paper was to help Christians think and act faithfully concerning issues family planning. I am, however, conscious that these are not abstract issues. For some readers, some of the issues I have addressed may be deeply personal. Perhaps you have realised that something you have done was not God's best intention. You may have had an abortion, or you may have used forms of birth control unaware of their contragestive mechanism. Or perhaps you have undergone IVF using donor gametes or have allowed embryos produced from your gametes to be destroyed or donated for research. Perhaps this article has provoked huilt in you concerning these or other actions. If so, how should you respond?

Firstly, if you acted in ignorance, without understanding fully or not realising that it was wrong, your guilt is less than a person who wilfully does wrong. Wrong actions committed in ignorance are, however, still sinful. The good news, however, is that, whether your actions were in ignorance or full knowledge, you can be assured that God is ready and able to forgive you. He *can* do this because Jesus died in your place and He *will* do it because Jesus rose from the dead and lives to bridge the gap between you and God. I encourage you to confess your sin to God and to ask for His forgiveness. If you do this sincerely, you can trust in the promise of Scripture that God will forgive you and cleanse you (1 John 1:9). The process of restoration may take time and you may carry scars throughout life. We may continue to struggle with memories and feelings about our past, but we can hold firmly to God's promise to forgive and cleanse us on the basis of Christ's death and resurrection. You may also find it helpful to speak to an older Christian or a Christian counsellor if you continue to be troubled. We can have confidence, though, that when Christ returns, we will be made like him and free of every effect of sin.

Perhaps your struggle is not with something you have done but with the realisation that certain options you had considered are no longer open to you. You may be pregnant and have been considering an abortion. If so, I urge you to carry on with your pregnancy. The baby growing inside you is not part of your body – he or she is a person with his or her own unique identity, created and loved by God. I realise there may be reasons why it may feel difficult, perhaps even impossible, to feel love towards the baby now or to imagine delivering it and caring for it after birth. Do not let those feelings override your better judgement. Your emotions may change as you progress through pregnancy and, if not, offering the baby for adoption after birth is a possibility. There are organisations that can give you support in coping with your pregnancy and finding appropriate care for the child after it is born (see Appendix 1). You will also find help and support in Christian churches. Alternatively, you may be struggling with subfertility and realise that your options are more limited than you had thought. If so, I encourage you to continue to pray that God will grant you a child if it is His best purpose for you. If He does not, I pray you will know His grace to sustain you and that you will discern how best to honour Him. Counselling or prayer support may be beneficial for you. God has promised to give you strength to face every situation and to live faithfully in a way that glorifies Him and serves His purpose (1 Corinthians 10:13; 2 Corinthians 12:9).

A third category of reader may be Christian healthcare professionals who recognise implications for their past or future practice. I encourage such readers to pray for wisdom to apply the principles I have suggested to their care for women and couples. I realise that in some specialties it may be extremely difficult to follow the stance I have proposed, but our primary responsibility as Christians is to honour God and as healthcare professionals to give the highest standard of care to every patient, including those who are not yet born. Refusing to do less than that may entail sacrifice of career opportunities or, perhaps, even one's job. I pray you will draw deeply on God's grace as you seek to honour Him and love others in His name.

About the Author

Paul Coulter was born and raised in Northern Ireland where he continues to live and work. He is married to Gar-Ling, who is Chinese Malaysian, and they have two young children. Paul studied Medical Genetics (BSc with first class honours in 1997) and medicine (MB, BCh, BAO with distinction in 2000) at Queen's University, Belfast. He subsequently worked in NHS hospitals and then in the Northern Ireland Hospice before leaving his medical career to engage in pastoral ministry, firstly with the Belfast Chinese Christian Church (BCCC) and then with Glenabbey Church in Newtownabbey. Whilst working at BCCC Paul studied part time for an MA in theology, which he obtained with distinction in 2007. More recently he attained a PhD in Divinity from University of Aberdeen whilst working as a lecturer in Practical Theology and Missiology in Belfast Bible College. He was also a non-executive director and chair of the research committee of the Patient and Client Council for Health and Social Care in Northern Ireland until December 2013.

Currently Paul is Head of Ministry Operations with Living Leadership, which trains and supports Christian leaders to live joyfully in Christ and serve him faithfully. He also continues academic work as an examiner and lecturer for several colleges and directs the work of the Centre for Christianity in Society as well as having an itinerant ministry as a Bible teacher and apologist. He loves reading, cycling, walking his dog, and listening to podcasts from BBC Radio 4.

You can find out more about Paul, contact him or access other materials by him through his website: www.paulcoulter.net.

Appendix 1: FURTHER HELP AND INFORMATION

Life UK

An organisation committed to the value of human life that offers free and confidential emotional help, counselling, and skilled listening via phone, text, or email to anyone affected by a difficult pregnancy or pregnancy loss.

- Website www.lifecharity.org.uk
- National helpline 0808 802 5433
- Text 07860077339

Christian Medical Fellowship

www.cmf.org.uk/ethics
A helpful collection of articles presenting a Christian perspective on ethical issues including those addressed in this paper.

APPENDIX 2: Timeline of significant events

1884 First recorded instance of conception through **artificial insemination using donor sperm**.

1908 The **Lambeth Conference** of Anglican bishops, in the context of societal concerns about falling birth rates, spoke disfavourably about artificial family planning, describing "all artificial means of restriction as demoralising to character and hostile to national welfare."

1920 The **USSR** becomes the first country to introduced legalized abortion.

1930 The **Lambeth Conference** of Anglican bishops, recognising that procreation could be separated from sex, described abstinence as the primary means of contraception but accepted the validity of artificial contraception when used according to Christian principles. At the same time they spoke against abortion.

The papal encyclical ***Casti Connubii***, in response to the Lambeth Conference's position, prohibited all forms of artificial birth control, including contraception and abortion.

1948 A commission of the **Archbishop of Canterbury** spoke against donor insemination on the basis that it made a personal act into a transaction.

The **Declaration of Geneva** said that doctors should have "the utmost respect for human life from the time of conception even against threat".

1949 The **International Code of Medical Ethics** said that "A doctor must always bear in mind the importance of preserving human life from conception until death".

1958 A court in Edinburgh, Scotland, ruled that **donor insemination did not constitute adultery**.

The **Lambeth Conference** of Anglican bishops spoke of stewardship of procreation as a responsibility entrusted by God to the couple.

1960 A **Department of Health committe**e decided not to ban **donor insemination** but suggested that it should be discouraged.

The first **oral contraceptive** drug was licensed for use by the FDA in the USA.

1967 The **Abortion Act** was passed, decriminalising abortion in England and Wales before 28 weeks when approved by two medical practitioners under certain conditions. In effect the Act led to abortion on demand. The Act also applies to Scotland but has never been extended to Northern Ireland.

1968 The papal encyclical ***Humanae vitae*** reinforced the Roman Catholic Church's opposition to all forms of artificial birth control and objected to donor insemination on the basis that it separated procreation from sexual intercourse.

1970 Researchers, led by Professor R.G. Edwards, began concerted efforts to fertilise eggs outside the body.

The **Declaration of Oslo** was formally adopted by the World Medical Association. It says that "therapeutic" termination of pregnancy is permissible if the Law and the local medical association allow it and "according to the doctor's individual conviction and conscience" in situations where

"the vital interests of the mother conflict with those of the unborn child". This radical change compared with the 1949 Code of Medical Ethics reflected the increasing numbers of countries legalising abortion around this time.

1978 The first live birth of a baby conceived through **IVF**.

1983 The **35th World Medical Assembly** in Venice, Italy, amended the words "from conception" in the 1948 Geneva Declaration to "from its beginning", allowing leeway for different interpretations of when life begins. It also deleted the words "from the time of conception until death" from the International Code of Medical Ethics".

1984 The **Warnock Report** was published. This was the end result of an inquiry surrounding issues of human fertilisation, embryology and donor insemination but did not consider abortion or contraception.

1985 The **Surrogacy Act** was passed, providing regulatory guidelines for surrogacy but recognising it as a legally acceptable practice within these guidelines.

As recommended in the Warnock Report, a **Voluntary Licensing Authority** was established under the auspices of the Royal College of Obstetricians and Gynaecologists and the Medical Research Council to regulate IVF and embryo research. The VLA was renamed the Interim Licensing Authority in 1989.

A series of court hearings initiated by Mrs Victoria **Gillick** in relation to provision of contraception to children under 16 years of age without parental consent concludes with the **Fraser Guidelines**.

1990 The **Human Fertilisation and Embryology Act** was passed, providing for the establishment of a new Authority to take over from the Interim Licensing Authority. The Act also lowered the legal age limit for abortions from 28 weeks to 24 weeks, reflecting advances in care of premature babies that lowered the limits of viability.

1991 The **Human Fertilisation and Embryology Authority (HFEA)** came into being, taking on responsibility for regulating and licensing donor insemination, IVF and research using embryonic cells.

1994 A Private Members Bill was passed **banning the use of fetal tissue** for research or treatment.

2008 The **Human Fertilisation and Embryology Act** ensured that new advances in technology of embryo formation would continue to be regulated by the HFEA, banned selection of sex of embryos for social reasons, changed requirements for IVF clinics to consider the need for a father and mother to a consideration of the need for supportive parenting, and allowed for same sex couples to be recognised as parents of children conceived using donor gametes and born through surrogacy.

British MP's voted against **proposed reductions in the legal time limit for abortions**.

APPENDIX 3: Glossary of terminology

Abortifacient	A drug intended to cause an abortion.
Abortion	An intervention that intentionally causes the termination of an established pregnancy either through administration of drugs or a surgical procedure. A miscarriage may be known as a spontaneous abortion.
Amniocentesis	A technique in which a sample of amniotic fluid (the fluid surrounding the developing baby) is removed from the womb of a pregnant woman to assist with diagnosis.
AI	Artificial Insemination. A procedure in which sperm are deposited within the vagina in proximity to the cervix.
Assisted conception	Techniques aimed at increasing the possibility of fertilisation of an egg by sperm outside the normal context of sexual intercourse. These include AI, GIFT, IUI and IVF.
Azoospermia	The complete absence of sperm in a man's semen.
Cervix (cervical)	The neck of the womb (referring to the cervix).
Chromosome	One of 46 structures in the nucleus of a cell which contain the DNA that carries the information needed to guide development and determine genetic characteristics.
Conception	The process of becoming pregnant (conceiving a baby).
Contraception	An technique to prevent the conception of a baby by preventing sperm reaching the egg during sexual intercourse.
Contragestion	Any technique to prevent a zygote from implanting in the lining of the womb.
Cytoplasm	The material in a cell in which the nucleus is suspended.
DNA	The chemical that carries the information needed to reproduce new cells and regulate the cells' processes.
Egg	The female gamete produced by the ovary. The proper medical term is an oocyte.
Embryo	The developing human life prior to 56 days after fertilisation. Some people apply this term from fertilisation whilst others use the term 'preembryo' to describe the first 14 days of development.
Fallopian tube	A tube designed to carry the egg after ovulation from the woman's ovary to the womb.
Fertilisation	The union of sperm and egg that produces a zygote, the beginning of a new human life.
Fetus	The developing human from day 56 onwards until the time of birth. The fetus already has all organ systems present but in a developing form.
Gametes	The reproductive cells of the adult human being – sperm produced in the testes of the man and eggs produced in the ovaries of the woman. These contain half of the full number of chromosomes and are designed to combine in fertilisation to produce a new human life.
GIFT	Gamete Intra-Fallopian Transfer. An assisted conception procedure in which a woman's

	eggs are collected and injected together with sperm into the fallopian tube.
IUI	Intra-Uterine Insemination. An assisted conception procedure in which sperm are placed at the top of the womb (uterus).
IVF	In-Vitro Fertilisation. A procedure in which eggs are collected to be combined with prepared sperm in the laboratory with an aim to causing fertilisation. Developing embryos are then placed into the woman's womb in the hope of establishing pregnancy.
Lactation	Breast feeding.
Miscarriage	The unintentional loss of a pregnancy before 24 weeks (traditionally seen as the limit of viability).
Mitochondria	The powerhouses of the cell. Microscopic organelles that create energy powering the cells systems. They are inherited exclusively from the mother (in the egg cell) and contain their own genes (mDNA) that come only from her.
Nucleus	The part of a cell that contains the DNA.
Oestrogen	A hormone produced naturally in the female body that has an important part in regulating the monthly cycle during which ovulation occurs. It is also used in many hormonal contraceptives and as a treatment for certain gynaecological conditions.
Ovulation	The release of a mature egg from a woman's ovary under the influence of hormones that may be produced naturally in her monthly cycle or given medically.
Pregnancy	The period of time from implantation of the embryo in the lining of the womb until birth of the baby.
Primitive streak	A line of cells that appears in the developing embryo at around 15 to 18 days. It is from these cells that the individual human being will develop. In the case of identical twins two primitive streaks appear in the cells resulting from a single zygote (hence identical twins are called monozygous).
Progestogen	A group of hormones involved naturally in maintaining pregnancy. They are also used in some hormonal forms of contraception.
Sperm	The male gametes produced in the testes. Short for spermatozoa.
Zygote	The earliest stage of human life. The single cell that results when an egg is fertilised by a sperm.