

Footnotes

1. The answer to the question “What is life?” is beyond the scope of this article. There are several excellent resources dealing with this topic: James Stam-
baugh, “ ‘Life’ According to the Bible, and the Scientific Evidence,” *TJ* 6, no.
2 (1992): 98–121, online at www.answersingenesis.org/tj/v6/i2/life.asp; and
Jonathan Sarfati, “The Fall: A Cosmic Catastrophe,”
www.answersingenesis.org/docs2005/0221plant_death.asp.
2. This process, called *differentiation*, is the process by which the dividing cells
gradually become different from one another.
3. The name of the rapidly dividing ball of cells continues to change as size and
shape changes, with the name embryo being assigned at about three weeks after
fertilization. The term *fetus* is used from about the eighth week of development.
4. Christian Answers Net, “Does Life Begin Only When the Embryo Implants?”
www.christiananswers.net/q-sum/q-life014.html.
5. *Stedman’s Medical Dictionary*, 26th edition (Baltimore: Williams & Wilkins,
1995), p. 377.
6. *Stedman’s Medical Dictionary*, 27th edition (Baltimore: Williams & Wilkins,
2000), p. 394.
7. H.J. Morowitz and J.S. Trefil, *The Facts of Life: Science and the Abortion
Controversy* (New York: Oxford University Press, 1992).
8. Scott Gilbert, “When Does Human Life Begin?” *Developmental Biology* 8e
Online, 8e.devbio.com/article.php?ch=21&id=7.
9. Mark Blocher, *Vital Signs* (Chicago, IL: Moody Press, 1992), p. 91.
10. Gilbert, “When Does Human Life Begin?”
11. R.C. Sproul, *Abortion: A Rational Look at an Emotional Issue* (Colorado
Springs, CO: NavPress, 1990), p. 53–54.
12. *Ibid.*, p. 55.
13. John Frame, *Medical Ethics* (Phillipsburg, NJ: Presbyterian and Reformed
Publishing Company, 1988), p. 95.
14. See also Genesis 25:21–23; Isaiah 45.
15. David Menton, “Plan B: Over-the-Counter Abortion?” *Answers in Genesis*,
www.answersingenesis.org/articles/am/v2/n1/plan-b.

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You will understand the fear of the LORD and find the knowledge of God.
Based on Proverbs 2:3-5

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When Does Life Begin?

by Dr. Tommy Mitchell

When does human life begin? This question has confounded individuals and divided our society. Opinions have come from the right and the left, from pro-life advocates and those in favor of abortion on demand, from physicians and lawyers, from the pulpit and the courtroom.

When did I begin to be me? Is this a scientific question or a theological one?¹ Would this question be best left to scientists or to preachers and philosophers? Information and viewpoints from secular scientific sources and from theologians will be examined in this chapter, but the ultimate answer can have no authority unless that answer is based squarely on the Word of God. The Bible, because it is true, will not disagree with genuine science. Furthermore, the Bible is the only valid and consistent basis for making moral judgments, since it comes from the Creator of the whole world and all people in it. Any other basis for judgment would be a useless clamor of divergent, man-made opinions.

Who Is More Human?

Life is a continuum. From the season of growing in the womb to being born, from playing as a child to growing older, each stage of life seems to blend gracefully (or not so gracefully in my case) into the next. Life progresses and time passes, culminating in death. Death, a very visible end point, is more easily defined than the point at which the continuum of human life begins.

Where is the starting point? If life is indeed a continual process, can we not just work backward to its beginning? There are a variety of opinions about life’s beginnings. Many say life begins at conception. Others argue strongly that life does not start until implantation in the womb. Still others say that human life begins only when the umbilical cord is cut, making the newborn child an independent agent. How is fact separated from opinion?

Perhaps another way to ask the question is, when do we become human? Certainly a child sitting on grandpa’s knee or a fully grown adult would be considered human. Is the adult more human than the child? Of course not. No

reasonable person would consider the child to be less human. At what point along the journey did this child become human? Was it at conception, somewhere during his development, or at birth?

The Process

The initial event along the road of human development is fertilization. Twenty-three chromosomes from the mother and 23 chromosomes from the father are combined at the time of fertilization. At this point, the genetic makeup of the individual is determined. At this time, a unique individual, known as a zygote, begins to exist. But is this zygote human?

This zygote then divides again and again. Some cells develop into the placenta and are essential for implantation. Other cells develop into the anatomical parts of the baby.² The number of cells increases rapidly, and the name changes as the number increases. By the time this rapidly dividing ball of cells arrives in the uterus, it is called a blastocyst. Implantation in the uterine wall normally occurs about six days after fertilization.³

For reasons unclear to medical science, the mass of cells sometimes splits to produce identical twins. These twins are called identical because their sets of chromosomes are identical. Depending upon the stage of development when the split occurs, the twins may share certain placental parts, but the twins produced are distinct individuals. If the split occurs between the 13th and 15th days, the twins will actually share body parts, a condition known as conjoined twins, commonly called Siamese twins. (After that time, development and differentiation are too far along to allow successful splitting.)

Even though the names arbitrarily change throughout this process and certain milestones in development are evident, the process set in motion at the moment of conception is a continuous chain of events. In this sequence, groups of cells multiply and develop into specific body parts with amazing precision and a remarkably low rate of error, considering the complexity of changes that must occur. However, at no time in this process is there a scientific point at which the developing individual clearly “becomes a person,” any more than a baby becomes more human when it walks, talks, or is weaned. These milestones in zygote, blastocyst, embryonic, and fetal development are simply descriptions of anatomy, not hurdles met in the test of humanness. From a scientific point of view, the words are arbitrary and purely descriptive.

Can Science Help?

Scientists have studied the marvelous process previously described for decades. The changes in the form of the embryo through each stage are well documented. The question still remains, at what point does human life begin? There are numerous positions on this. Some of these will be reviewed here.

Science has, however, revealed the intricate developmental continuum from fertilization, through maturation, to the birth of the child. Each stage flows seamlessly into the next with a myriad of detailed embryological changes followed by organ growth and finely tuned development choreographed with precision. The more we learn about the process, the more amazingly complex we find it to be.

Life Begins at Conception

Although science has shown us the wonderful continuity of the development of life throughout all its stages, science has been unable to define the onset of humanness. However, there is ample information in Scripture for us to determine the answer to this problem.

The Bible contains numerous references to the unborn.¹⁴ Each time the Bible speaks of the unborn, there is reference to an actual person, a living human being already in existence. These Scriptures, taken in context, all indicate that God considers the unborn to be people. The language of the text continually describes them in personal terms.

Since the Bible treats those persons yet unborn as real persons, and since the development of a person is a continuum with a definite beginning at the moment of fertilization, the logical point at which a person begins to be human is at that beginning. The answer is that life begins at conception (using the now older definition of the term, here to be synonymous with fertilization). Frankly, no other conclusion is possible from Scripture or science.

What are the implications of this conclusion? Why is this important? Quite simply, the status of the zygote/embryo/fetus is central to many issues facing our society. The most obvious issue in this regard is abortion. If the zygote is a human life, then abortion is murder. The same can be said of issues surrounding the embryonic stem cell debate. If the embryo is human, then destroying it is murder, no matter what supposedly altruistic reason is given as justification. The ethics of cloning require consideration of the concept of humanness and the timing of its onset. A person's acceptance or rejection of the controversial morning after pill is based upon the determination of when human life begins.¹⁵

Complex issues may not have simple solutions, but when examined objectively in light of God's Word, without biases introduced by other motivations, God's truth will reveal the correct answers. Science can give us better understanding of the world God created, and what we see in God's world will agree with the truth we read in God's Word. We dare not play word games with human life to justify personal agendas. Scripture provides no real loopholes or escape clauses to excuse us from the principle that God created human beings in His own image, designed them to reproduce after their kind, and sent Jesus Christ into the world as a human being to die for us all, thus demonstrating the inestimable love our Creator has for each human life.

If men fight, and hurt a woman with child, so that she gives birth prematurely, yet no harm follows, he shall surely be punished accordingly as the woman's husband imposes on him; and he shall pay as the judges determine. But if any harm follows, then you shall give life for life, eye for eye, tooth for tooth, hand for hand, foot for foot . . . (Exodus 21:22–24).

This verse gives directions for dealing with a situation in which two men are fighting and they accidentally harm a pregnant woman. Two circumstances are noted here. The first situation is when the woman gives birth prematurely and “no harm follows.” The common interpretation states that here the child is lost due to a premature birth, and the woman herself does not suffer a serious injury. Here the penalty is a fine of some type to compensate for the loss of the child.

The second circumstance is “if any harm follows.” Here the common interpretation is that is the woman gives birth prematurely, the child dies, and the woman herself dies. Here the penalty is life for life. It is argued that since there is only a fine imposed in the first circumstance for the loss of only the premature child while the death penalty is imposed for the loss of the mother, the unborn is less valuable than an adult. Thus, the unborn need not be considered to have achieved full humanness before birth.

However, upon closer examination, this type of interpretation may not be valid. The “harm” indicated in these verses may refer to the child and not to the mother. In the first circumstance, the injured mother gives birth prematurely and no “harm” comes to the child. In other words, the premature child lives. Thus, a fine is levied for causing the premature birth and the potential danger involved. In the second situation, there is a premature birth and the “harm” that follows is the death of the child. Here the penalty is life for life. Therefore, the Bible does not hold that the life of the unborn is less valuable than the life of an adult.

John Frame, in the book *Medical Ethics*, says this, “There is nothing in Scripture that even remotely suggests that the unborn child is anything less than a human person from the moment of conception”¹³ (emphasis his). Here, conception is meant to imply the time of fertilization.

So Where Are We?

A purely scientific examination of human development from the moment of fertilization until birth provides no experimental method that can gauge humanness. Stages of maturation have been described and cataloged. Chemical processes and changes in size and shape have been analyzed. Electrical activity has been monitored. However, even with this vast amount of knowledge, there is no consensus among scientists as to where along this marvelous chain of events an embryo (or zygote or fetus or baby, depending upon who is being asked) becomes human.

A Genetic Position

The simplest view is based on genetics. Those who hold this position argue that since a genetically unique individual is created at the time of fertilization, each human life begins at fertilization. The zygote formed at fertilization is different from all others and, if it survives, will grow into a person with his or her own unique set of genes. In this view, the terms fertilization and conception are interchangeable. Thus, in this view, life would be said to begin at conception.

The phenomenon of twinning is sometimes used to argue against this position. Until about day 14, there is the possibility that the zygote will split, producing twins. Those who oppose a genetic view say that there is no uniqueness to the zygote, no humanness or personhood, until the potential for twinning has passed. They ask, if the zygote is an individual “person” at fertilization, then what is the nature of that “personhood” if the zygote should split into two individuals?

Another objection to this view is the fact the many fertilized eggs never successfully implant. An estimated 20–50 percent of fertilizations die or are spontaneously aborted.⁴ Thus, those who raise this objection hold that, since there are such a large number of zygotes that never fully develop, those zygotes are not truly human.

However, neither of the objections can be so easily supported. The twinning objection falls short when one considers the problem presented by the existence of so-called Siamese twins. In these cases, the zygote does not completely split, and the children are born joined together, often sharing certain body organs. Nonetheless, both twins have distinct personalities and are distinct individuals. Here the “personhood” obviously could not be granted after twinning since the process was never completed.

The second objection, the high loss rate of zygotes, is also not logical. The occurrence of spontaneous abortions does not mean that the lost were not fully human, any more than the development of some deadly disease in a child makes the child suddenly nonhuman.

The Implantation View

An increasingly heard viewpoint today is related to the implantation of the blastocyst into the uterine lining. This implantation process begins on day six following fertilization and can continue until around day nine. Some now suggest that it is not until this time that the zygote can be called human life. However, achieving implantation does not make the individual more human; rather, implantation makes the individual more likely to survive.

Interestingly enough, the popularity of this view has led to some changes in how some define conception. Until recently, conception was synonymous with fertiliza-

tion. In fact, in the 26th edition of Stedman’s Medical Dictionary, conception was defined as the “act of conceiving, or becoming pregnant; fertilization of the oocyte (ovum) by a spermatozoon to form a viable zygote.”⁵ Conception was defined as the time of fertilization.

However, something interesting happened in the next five years. In the 27th edition of Stedman’s Medical Dictionary, conception is defined as follows: “Act of conceiving; the implantation of the blastocyte in the endometrium.”⁶ Note here that implantation is now the defining point in conception. The scientific community arbitrarily, without any scientific justification, redefined the starting point of life.

According to the redefined view, a zygote less than nine or so days old, having not yet completed implantation, would not be considered alive. If it is not alive, it certainly cannot be human. This change was completely arbitrary, for there was no basic change in the understanding of the developmental process that would make this redefinition necessary.

The new definition would, however, have great implications in the political, ethical, and moral arenas. Personal and governmental decision-making on such issues as embryonic stem cell research, cloning, and the so-called “morning after pill” directly depends on the validity of this definition. If preimplantation blastocysts were not really alive, they could be guiltlessly harvested or destroyed prior to the six-to-nine day mark because “conception” had not yet occurred.

The Embryological View

The embryological view holds that human life begins 12–14 days after fertilization, the time period after which identical twins would not occur. (Embryo can refer to the developing baby at two to three weeks after fertilization or more loosely to all the stages from zygote to fetus.) No individuality and therefore no humanness is considered to exist until it is not possible for twinning to happen. Here, the initial zygote is not human and possesses no aspect of “personhood.” As stated previously, this line of reasoning fails because of the shortcoming of the twinning argument itself. Specifically, the fact that conjoined (Siamese) twins are distinct persons is undeniable; their humanity is not obviated by the fact that they share body parts.

The Neurologic View

In this view, human life begins when the brain of the fetus has developed enough to generate a recognizable pattern on an electroencephalogram (EEG). Here, it is proposed that humanness is attained when the brain has matured to the point that the appropriate neural pathways have developed.⁷ This point is reached at about 26 weeks after fertilization. After this level of maturation has been achieved, the fetus is presumably able to engage in mental activity consistent with being human.

Others take a different view of neurological maturation and propose that human

was formed. Sproul indicates, “Even those who do not agree that life begins before birth grant that there is continuity between a child that is conceived and a child that is born. Every child has a past before birth. The issue is this: Was that past personal, or was it impersonal with personhood beginning only at birth?”¹²

Psalm 51:5

This verse is frequently used to make the case for human life beginning at conception. It reads:

Behold, I was brought forth in iniquity,
And in sin my mother conceived me.

The most often heard interpretation of this passage is that the author, David, sees that he was sinful even at the time he was conceived. If he was not a person, then it follows that he could not have a sinful human nature at that time. A prehuman mass of cells could not have any basis for morality. Only the “humanness” occurring at the time of conception would allow David to possess a sinful nature at that time.

Life before Birth

These Scriptures reveal that there is personhood before birth. The personal nature of the references in the Bible shows how God views the unborn child. Another text frequently used to prove the humanness of the fetus is found in the first chapter of Luke:

Now Mary arose in those days and went into the hill country with haste, to a city of Judah, and entered the house of Zacharias and greeted Elizabeth. And it happened, when Elizabeth heard the greeting of Mary, that the babe leaped in her womb; and Elizabeth was filled with the Holy Spirit. Then she spoke out with a loud voice and said, “Blessed are you among women, and blessed is the fruit of your womb! But why is this granted to me, that the mother of my Lord should come to me? For indeed, as soon as the voice of your greeting sounded in my ears, the babe leaped in my womb for joy” (Luke 1:39-44).

We read in this passage of a meeting between Mary the mother of Jesus and Elizabeth, her cousin, the mother of John the Baptist. Here Elizabeth describes the life in her womb as “the babe.” God’s inspired Word reports Elizabeth’s assessment that John “leaped” in the womb because of the presence of Jesus. Some try to discount this episode as a miracle, claiming it does not relate to the personhood of the unborn. Nonetheless, God’s Word describes this unborn child as capable of exhibiting joy in the presence of his Savior.

Are the Unborn of Less Worth?

Exodus 21 has been put forth by some to suggest the God himself holds that the life of an unborn is less valuable than the life of an adult.

believe in a ‘soul,’ then one need not believe in a moment of ensoulment. The moments of fertilization, gastrulation, neurulation, and birth, are then milestones in the gradual acquisition of what it is to be human. While one may have a particular belief in when the embryo becomes human, it is difficult to justify such a belief solely by science.”¹⁰

If Not Science, Then What?

If science cannot give us the answer, then is there another place we can turn? As Christians, we should turn to the Bible, God’s Word, to see if there is a solution to this dilemma.

Psalm 139:13–16

Perhaps the most often quoted portion of Scripture on this subject is Psalm 139:13–16.

For You formed my inward parts:
You covered me in my mother’s womb.
I will praise You, for I am fearfully and wonderfully made;
Marvelous are Your works,
And that my soul knows very well.
My frame was not hidden from You,
When I was made in secret,
And skillfully wrought in the lowest parts of the earth.
Your eyes saw my substance, being yet unformed.
And in Your book they all were written,
The days fashioned for me,
When as yet there were none of them.

Here we read about God knowing the Psalmist while he was “yet unformed,” while he was being “made in secret,” in a place invisible to human eyes. The uses of the personal pronouns in these verses indicate that there was, indeed, a person present before birth. R.C. Sproul notes, “Scripture does assume a continuity of life from before the time of birth to after the time of birth. The same language and the same personal pronouns are used indiscriminately for both stages.”¹¹

Jeremiah 1:4–5

Then the word of the Lord came to me, saying:
“Before I formed you in the womb I knew you;
Before you were born I sanctified you;
I ordained you a prophet to the nations.”

Here God tells Jeremiah that he was set apart before he was born. This would indicate that there was personhood present before Jeremiah’s birth. The verse even indicates that God considered Jeremiah a person and that he was known before he

life begins at around 20 weeks gestation. This is the time when the thalamus, a portion of the brain that is centrally located, is formed. The thalamus is involved in processing information before the information reaches the cerebral cortex and also is a part of a complex system of neural connections that play a role in consciousness.

These distinctions are arbitrary. The developing brain does display some electrical activity before the 26-week mark. It could just as easily be argued that any brain activity would constitute humanness.

The Ecological View

Proponents of the ecological view hold that the fetus is human when it reaches a level of maturation when it can exist outside the mother’s womb.⁸ In other words, a fetus is human when it can live separated from its mother. Here the limiting factor is usually not neurological development, but rather the degree of maturation of the lungs.

This view of humanness presents a very interesting problem. The problem is that, over the last century, we have been becoming human earlier and earlier. Here the issue is not the actual stage of development of the fetus. The limiting factor rather is the current state of medical technology. For example, some 20 years ago the age of viability of a prematurely born fetus was about 28 weeks; today it is around 24 weeks. Thus, in this view, man himself, through his advances in technology, can grant humanness where it did not previously exist!

The Birthday View

Some hold the position that human life begins only at the point when the baby is born. Here the baby is human when the umbilical cord is cut, and the child survives based on the adequate functioning of its own lungs, circulatory system, etc.

The shortcoming of this reasoning is that even after birth, the child is not truly independent of its mother. Without care from someone, an infant would die very shortly after birth. This supposed “independence” is very much an arbitrary concept.

Other Views

There are still other points of view as to the question of when human life begins. Some suggest that a fetus is human when the mother can feel it move in the womb. Others say that humanness begins when the child takes its first breath on its own. Francis Crick, one of the co-discoverers of the structure of DNA, says that a child should not be declared “human” until three days after birth.⁹

There are clearly significant differences in the way that the scientific community views the beginning of life. There is no obvious consensus among scientists about when human life begins. So, can science really help us answer this question? Perhaps science, by its nature, is not capable of dealing directly with this problem. Scott Gilbert, PhD, professor of biology at Swarthmore College, notes, “If one does not

believe in a ‘soul,’ then one need not believe in a moment of ensoulment. The moments of fertilization, gastrulation, neurulation, and birth, are then milestones in the gradual acquisition of what it is to be human. While one may have a particular belief in when the embryo becomes human, it is difficult to justify such a belief solely by science.”¹⁰

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