

SLB-014 (10-1-06)
Spiritual Life Basics
Part II: What is Life?

Lesson 2: Human Life

Human Life

- When Does Human Life Begin?
- The question of when a human life begins is a profoundly intricate one, with widespread implications, ranging from abortion rights to stem cell research and beyond.
- A key point in the debate rests on the way in which we choose to define the concepts of humanity, life and human life.
- What does it mean to be alive? What does it mean to be human? Is a zygote or an embryo alive? Is a zygote or an embryo a human being?

Human Life

- These are intricate philosophical questions that often incite intense debate, for their answers are used as evidence in the answers to questions about the moral status of a zygote, embryo or fetus.
- The question of when human life begins has been pondered throughout history and in a multitude of cultural contexts.
- The "answer" is fluid, in that it has been changing throughout history, because any answer about when human life begins is deeply integrated with the beliefs, values and social constructs of the community or individual that drew the conclusion.

Human Life

- Historically, the answer has been coupled with the issue of abortion.
- While abortion is also a complicated issue with many confounding political, social and cultural factors, historically one of the fundamental determinants of the moral consequences of abortion, stemmed from what stage people viewed the embryo as a human being.
- The moral acceptance of abortion extended from the question as to whether abortion was the destruction of tissue, or whether it was an act of homicide.

Human Life

- Historical Views of When Human Life Begins
- At times, the distinction as to when human life begins was based on a community's need to regulate its population flux.
- In ancient Sparta, abortion was frowned upon because it ran counter to the desire to raise strong males for military struggles.
- Yet in Sparta, the practice of leaving a child to die of exposure on a hillside was not considered murder if the child was judged to be unsuitable for some reason (Morowitz and Trefil 1992).

Human Life

- Plato contended that the human soul does not enter the body until birth, and this was determinative for legal science in ancient Roman society (Buss 1967).
- Plato, in the ideal state detailed in his Republic, laid it down as a matter of eugenic policy that parents should bear children for the state for a defined period of years.
- After that period sexual intercourse would be permitted, but the couple involved would make every effort to prevent any children conceived from seeing light and dispose of the newborn child only if the former course proved impossible (Bonner 1985).

Human Life

- The Stoics held that the fetus was no more than a part of the women's body during the entire duration of pregnancy and was ensouled only at birth by a process of cooling by the air, which transformed a lump of flesh into a living and sentient being (Tribe 1990).

Human Life

- Pythagoreans stressed that the human soul was created at the time of conception and this is reflected in the Hippocratic oath.
- Hippocrates was of seemingly a minority position in ancient Greece, in that he disapproved of abortion.
- The Oath expressly forbids giving a woman "an instrument to produce abortion," and it has been interpreted to forbid inducing abortion by any other method (Tribe 1990).
- Hippocrates' outright disapproval of abortion stemmed from his belief that conception marked the beginning of a human life (Tribe 1990).

Human Life

- Aristotle formulated a view on abortion and the beginning of human life that was widely accepted, and even acknowledged and practiced for some time in the Catholic Church.
- Aristotle believed that the state should fix the number of children a married couple could have...
- In his view, the size of the family should be determined by the state, and if children were conceived in excess of the permitted number, an abortion should be procured at an early stage of pregnancy "before sensation and life develop in the embryo" (Bonner, 1985).

Human Life

- Aristotle detailed the notion of the "animation" of the fetus, and associated individuality, life, and form as those features for which the "soul" was responsible at a certain point in gestation.
- Aristotle asserted that when soul was added to the matter in the womb, a living individuated creature was created, which had the form and rational power of a man (O'Donovan 1975).
- This process of formation or animation, manifested by the movement of the fetus in the womb, took place, in Aristotle's opinion, on the fortieth day after conception in the case of a male child and on the ninetieth day after conception for a female child (Bonner 1985).

Human Life

- The Jewish interpretation of when human life begins is extracted predominantly from three sources: the Torah, the Jewish Talmudic Law, and the rabbinical writings.
- Since the Torah does not make any direct references regarding the beginning of human life, the inferences as to when human life begins has stemmed from the Torah's stated position on the issue of abortion.
- In the Torah, there is not an explicit prohibition directed against a voluntary abortion.

Human Life

- The legislation in the Torah makes only one reference to abortion, and it is through implication (Jakobovits 1973):
- *And if men strive together, and hurt a woman with a child, so that her fruit depart, and yet no harm follow, he shall be surely fined, according as the woman's husband shall lay upon him; and he shall pay as the judges determine. But if any harm follow, then shalt thou give life for life...* (Exodus 21: 22-23; as cited by Jakobovits 1973).

Human Life

- According to the Jewish interpretation, if "no harm follow" the "hurt" to the woman resulting in the loss of her fruit refers to the survival of the woman following her miscarriage; in that case there is no capital guilt involved, and the attacker is merely liable to pay compensation for the distress that the miscarriage may cause the family (Jakobovits, 1973).
- "But if any harm follow," i.e., the woman is fatally injured), then the man responsible for her death has to give "life for life"; in that event the capital charge of murder exempts him from any monetary liability for the aborted fetus (Jakobovits 1973).

Human Life

- From the interpretation of this passage it can be concurred that the killing of an unborn child is not considered murder punishable by death in Jewish law.
- What is explicitly stated in the Jewish text, is that murder is an offense that is punishable by death: "He that smiteth a man, so that he dieth, shall surely be put to death" (Exodus 21:12; as cited by Jakobovits 1973).
- The Rabbis had to reconcile the contexts of these two passages, and reached the conclusion that the capital charge of murder should be used for death of "a man, but not a fetus" (Mekhilta; as cited by Jakobovits 1973).

Human Life

- If a woman is in hard travail {and her life cannot otherwise be saved}, one cuts up the child within her womb and extracts it member by member, because her life comes before that of {the child}. But if the greater part {or the head} was delivered, one may not touch it, for one may not set aside one person's life for the sake of another (Talmud, Tohoroth II Oholoth 7:6; as cited by Jakobovits 1973).
- This is the sole reference to abortion in the principles of Jewish law, and it is more explicit in emphasizing the belief that human life begins once the head of a full term baby emerges, because once the head emerges the infant is given the same status of human life as the mother.

Human Life

- Some of the Christian interpretations on abortion, and thus indirectly when human life begins, are influenced by the writings of the Old Testament.
- Under Greek influence [some translations of the] Septuagint version of Exodus 21:22-23 came to make a distinction between an unformed and a formed fetus, the latter was considered an independent person (Buss 1967).
- This Christian tradition that disputes the Jewish view apparently resulted from a mistranslation in the Septuagint, where the Hebrew for "no harm follow" was replaced with the Greek for "imperfectly formed" (Jakobovits 1973):

Human Life

- *And if two men strive together and smite a woman with child, and her child be born imperfectly formed, he shall be forced to pay a penalty: as the woman's husband shall lay upon him he shall pay with valuation. But if it be perfectly formed, he shall give life for life (Exodus 21:21-23; as cited by Bonner 1985).*

Human Life

- Tertullian and later church fathers accepted this interpretation, distinguishing between an unformed and a formed fetus and branding the killing of the latter as murder.
- The formed fetus was to be accorded full human status, and this distinction was subsequently embodied in canon law as well as in Justinian Law (Jakobovits 1973).
- In the late nineteenth century, following the discovery of fertilization, the debate about abortion within the Catholic church tipped in favor of its now familiar position that human life begins at conception.

Human Life

- This view was enhanced by the theological acceptance of the Immaculate Conception of Mary. In 1701 Pope Clement XI declared the Immaculate Conception a feast of universal obligation, and in 1854 Pius IX incorporated into Catholic dogma the teaching that Mary was without sin for the moment of her conception (Tribe 1990).
- These beliefs did not coincide with the prior view that the fetus did not acquire a soul until later in pregnancy, so the church had to unite its doctrine so that the act of conception coincided with the beginning of human life.

Human Life

- Contemporary scientific literature proposes a variety of answers to the question of when human life begins.
- Metabolic View:
- The metabolic view takes the stance that a single developmental moment marking the beginning of human life does not exist.
- Both the sperm and egg cells should individually be considered to be units of life in the same respect as any other single or multicellular organism.
- Thus, neither the union of two gametes nor any developmental point thereafter should be designated as the beginning of new life.

Human Life

- Another slightly different though similar position maintains that the argument over when a new human life begins is irrelevant because the development of a child is a smoothly continuous process...
- Discrete marking points ...are entirely artificial constructions of biologists and doctors in order to better categorize development for academic purposes.
- This position is supported by recent research that has revealed that fertilization itself is not even an instantaneous event, but rather a process that takes 20-22 hours between the time the sperm penetrates the outermost layers of the egg and the formation of a diploid cell (Kuhse 1988)

Human Life

- Genetic View:
- The genetic view takes the position that the creation of a genetically unique individual is the moment at which life begins.
- This event is often described as taking place at fertilization, thus fertilization marks the beginning of human life.
- During this developmental event, the genes originating from two sources combine to form a single individual with a different and unique set of genes.

Human Life

- One of the most popular arguments for fertilization as the beginning of human life is that at fertilization a new combination of genetic material is created for the first time; thus, the zygote is an individual, unique from all others.
- Although the opinion that life begins at fertilization is the most popular view among the public, many scientists no longer support this position, as an increasing number of scientific discoveries seem to contradict it.

Human Life

- One such discovery in the last twenty years is that research has shown that there is no "moment of fertilization" at all.
- Scientists now choose to view fertilization as a process that occurs over a period of 12-24 hours.
- After sperm are released they must remain in the female reproductive tract for seven hours before they are capable of fertilizing the egg.

Human Life

- Approximately ten hours are required for the sperm to travel up to the fallopian tube where they find the egg.
- The meeting of the egg and the sperm itself is not even an instantaneous process, but rather a complex biochemical interaction through which the sperm ultimately reaches the inner portion of the egg.
- Following fertilization, the chromosomes contained within the sperm and the chromosomes of the egg meet to form a diploid organism, now called a zygote, over a period of 24 hours. (Shannon and Wolter 1990).

Human Life

- Thus, even if one were to argue that life begins at fertilization, fertilization is not a moment, but rather a continuous process lasting 12-24 hours, with an additional 24 hours required to complete the formation of a diploid individual.
- The most popular argument against the idea that life begins at the moment of fertilization has been dubbed the "twinning argument."
- The main point of this argument is that although a zygote is genetically unique from its parents from the moment a diploid organism is formed; it is possible for that zygote to split into two or more zygotes up until 14 or 15 days after fertilization.

Human Life

- Even though the chances of twinning are not very great, as long as there is the potential for it to occur the zygote has not completed the process of individuation and is not an ontological individual.
- Proponents of this view often propose the following hypothetical situation: Suppose that an egg is fertilized.
- At that moment a new life begins; the zygote gains a "soul," in the Catholic line of thought, or "personhood" in a secular line of thought.
- Then suppose that the zygote splits to form twins. Does the soul of the zygote split as well?

Human Life

- No, this is impossible.
- Yet no one would argue that twins share the same "soul" or the same "personhood."
- Thus, supporters of this view maintain that the quality of "soul" or "personhood" must be conferred after there is no longer any potential for twinning.
(Shannon and Wolter 1990)

Human Life

- The argument that human life begins at the moment that chromosomes of the sperm meet the chromosomes of the egg to form a genetically unique individual is also endangered by the twinning argument because genetic uniqueness is not a requirement for an individual human life.
- "Genetic uniqueness" can be shared by multiple individuals, particularly identical twins.
- Thus, this argument continues, the moment at which a unique individual human forms is not the moment when its genetic code is determined, but rather the moment when the zygote can no longer split into multiple individuals.

Human Life

- In addition to twinning, there are other complexities that further confound the idea of the moment of conception.
- Just as it possible for a zygote to form two or more individuals before it is implanted in the uterus, it is also possible for it to not continue to develop at all, but rather just become a part of the placenta. (Shannon and Wolter 1990).
- It is estimated that more the 50% of the fertilized eggs abort spontaneously and never become children (see Gilbert 2003).

Human Life

- Embryological View:
- In contrast to the genetic view, the embryological view states that human life originates not at fertilization but rather at gastrulation.
- Human embryos are capable of splitting into identical twins as late as 12 days after fertilization resulting in the development of separate individuals with unique personalities and different souls, according to the religious view.
- Therefore, properties governing individuality are not set until after gastrulation. This view is endorsed by a host of contemporary scientists such as Renfree (1982), C. Grobstein (1988) and McLaren.

Human Life

- One of the most popular positions among philosophers is the perspective that life begins at the point of gastrulation, that point at which the zygote is an ontological individual and can no longer become two individuals.
- Gastrulation commences at the beginning of the third week of pregnancy, when the zygote, now known as an embryo is implanted into the uterus of the mother.
- The cells are now differentiated into three categories that will give rise to the different types of body tissue. (Shannon and Wolter 1990).

Human Life

- After gastrulation the zygote is destined to form no more than one human being.
- The philosophers who support this position argue that there exists a difference between a human individual and a human person.
- A zygote is both human and numerically single and thus a human individual.
- However, because individuality is not certain until implantation is complete, and because individuality is a necessary condition of personhood, the zygote is not yet a human person. (Ford 1988; Shannon and Wolter 1990; McCormick 1991).

Human Life

- Catholic scholars Shannon and Wolter (1990) describe this eloquently saying, "An individual is not an individual, and therefore not a person, until the process of restriction is complete and determination of particular cells has occurred.
- Then, and only then, it is clear that another individual cannot come from the cells of this embryo."

Human Life

- Some would argue that in the discussion of when human life begins the question of whether a zygote will eventually become one individual or multiple individuals is irrelevant.
- The key point is that at least one human life may begin as the result of the zygote, and thus human life began at the creation of the zygote, fourteen days before gastrulation.

Human Life

- Neurological view:
- Although most cultures identify the qualities of humanity as different from other living organisms, there is also a universal view that all forms of life on earth are finite.
- Implicit in the later view is the reality that all life has both a beginning and an end, usually identified as some form of death.
- The debate surrounding the exact moment marking the beginning of a human life contrasts the certainty and consistency with which the instant of death is described.

Human Life

- Contemporary American (and Japanese) society defines death as the loss of the pattern produced by a cerebral electroencephalogram (EEG).
- If life and death are based upon the same standard of measurement, then the beginning of human life should be recognized as the time when a fetus acquires a recognizable EEG pattern.
- This acquisition occurs approximately 24- 27 weeks after the conception of the fetus and is the basis for the neurological view of the beginning of human life.

Human Life

- Despite lacking a precise explanation for the connection between the EEG and neural activity, there is a strong argument that the unique and highly recognizable EEG pattern produced by a mature brain is a defining characteristic of humanity (Morowitz and Trefil 1992).
- Therefore, the moment that a developing fetus first exhibits an EEG pattern consistent with that of a mature brain is indicative of the beginning of human life.
- It is from this point and onward during development that the fetus is capable of the type of mental activity associated with humanity (Morowitz and Trefil 1992).

Human Life

- The precept at the heart of the neurological view of the beginning of human life is the significant development of neural pathways that are critical for characteristic human brain activity. The formation of these neural connections is often viewed to culminate in the acquisition of humanness, a stage during the third trimester of human gestation when the overwhelming majority of neural pathways in the cerebral cortex are established (Morowitz and Trefil 1992). The contemporary concept of the acquisition of humanness was developed and elaborated during the later half of the twentieth century by theological and biological leaders who emphasized the importance of the cerebral cortex in characterizing humanness.

Human Life

- The contemporary idea of the acquisition of humanness is based on the contemporary theories of developmental embryology.
- Cerebral nerve cells accumulate in number and continually differentiate through the end of the second trimester of human pregnancy (Morowitz and Trefil 1992).
- However, it is not until the seventh month of gestation that a significant number of connections between the newly amassed neurons begin to take form.
- It is only after the neurons are linked via synapse connections that the fetus is thought to acquire humanness.

Human Life

- Just as a pile of unconnected microchips is incapable of functioning and is therefore not called a computer, the unconnected neurons of the pre 24-week fetal brain lack the capacity to function, thus the developing fetus has yet to acquire humanness (Morowitz and Trefil 1992).

Human Life

- Ecological / Technological view:
- Advocates of the neurological view contend that human life begins when a developing fetus acquires humanness, a point designated by brain activity that can be described as characteristically human. But if this developing fetus is separated from its mother at an early stage, regardless of the state of neural development, the fetus will be unable to sustain life on its own. The total dependence of the developing fetus for the majority of gestation catalyzed the formation of another view of when human life begins.

Human Life

- The ecological/technological view of when human life begins designates this point when an individual can exist separately from the environment in which it was dependent for development (i.e., its mother's womb).
- Under most circumstances, the limiting factor for human viability is not the development of neural connections but the maturation of the lungs.
- However, advances in medical science permit a premature fetus to breathe after only 25 weeks of gestation, a stage in its development prior to the complete formation of functioning lungs (Gilbert 2002).

Human Life

- Self-Consciousness: Contemporary Philosophical Stands on When Human Life Begins
- There are philosophers, although not very many, who would dare to make the stance that a fetus nor an infant is a human being because it does not possess a consciousness of itself.
- This of course means that neither a zygote nor an embryo is a person either.
- Michael Tooley is one of these philosophers who describes his perspective in the article "Abortion and Infanticide." Essentially he argues that abortion and infanticide are really no different, if you support one, then you must support the other.

Human Life

- His argument is that in order to claim that an adult has the right to live and an embryo or a fetus does not, one must be able to identify some moment where the moral status of the organism in question changes.
- There is nothing inherent about birth that it should automatically be hailed as this defining moment.
- A more justified moment, Tooley argues, is the moment at which the human child gains consciousness.

Human Life

- At this moment, not at birth, should the child be considered a full fledged person, entitled to all the rights, particularly the right to life, that human adults are entitled to (Tooley 1999).
- The main problem that most people find with this position on when human life begins is that it condones infanticide, arguing that infants do not have the same right to life as adult humans do.
- Most people reject this view of when life begins...
- Tooley, however, argues that this rejection of his perspective is based on a purely emotional response to the idea of infanticide and not on logic or reasoning.

Human Life

- Science has not been able to give a definitive answer to this question.
- One opinion is that the acquisition of humanness is a gradual phenomenon, rather than one that occurs at any particular moment.
- If one does not believe in a "soul," then one need not believe in a moment of ensoulment.
- The moments of fertilization, gastrulation, neurulation, birth, and consciousness are 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.

Human Life and the Soul

- Human Life is distinct from Biological Life.
- Animals (Biological Life) die when there is insufficient blood to sustain life.
- Humans are clearly stated to die when the Soul departs:
- Rachel's death in Genesis 35:18 equates with the soul (Hebrew nephesh) departing.
- And when Elijah prays in 1 Kings 17:21 for the return of a widow's boy to life, he entreats, "O LORD my God, I pray you, let this child's nephesh come into him again".
- So death meant that something called nephesh (or "soul") became separated from the body, and life could return when this soul returned.

Human Life and the Soul

"To attain any knowledge about the soul is one of the most difficult things in the world."

- "Aristotle's frustration has been experienced by all who have attempted to comprehend the complexities of the human soul.
- What it is (or even that it is), how it came to be, when its existence begins, and how it comes to be present in a particular human are just some aspects of ensoulment that continue to call forth dialogue among theologians."
- (En soulment and the Sacredness of Human Life by G. Steven Suits, MD)