Personhood and the Fetus

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Writing in *The New York Times* Mary Ziegler (2019), a law professor, has observed that the disagreement between defenders and opponents of abortion rights has increasingly been cast as one over science. Part of the scientific dispute is about when human life begins during human embryonic development. Ziegler does not endorse such a reinterpretation of the disagreement. Developmental biologist Scott Gilbert goes even further, arguing that scientists are being asked to answer theological questions (Gilbert and Pinto-Correia 2017).

Largely (but not entirely) following Gilbert and Pinto-Correia (2017), five different stages during human embryogenesis can be found each of which can be taken to be the beginning of *human* life.[1] There are arguments in favor of the use of each of these stages, and arguments against. It will be clear below that these arguments go well beyond science: experiments or calculations will not decide the status of the arguments. There simply is nothing in science that decides the issue of when human life begins during embryogenesis[2]:

1. **Fertilization**:

   Rationale: A new human being is supposed to have been formed when egg and gamete fuse and genetic materials of both parents combine to form a fertilized egg.

   Arguments for:

   - The fertilized egg has the genotype of the future individual.
   - The stage is a discrete event with a definite beginning and end.
   - According to the religious philosopher, Paul Ramsey (1970): "Genetics teaches that we were from the beginning what we are in every cell and in every human attribute."

   Arguments against:

   - This is entirely a genetic view of human beings. Thus is suffers from an extreme version of the discredited doctrine of genetic reductionism (Sarkar 1998).
   - No competent biologist would accept that every human attribute is present in the genes in the fertilized egg.
   - There are around a trillion different genotypes in the cells (B cells) of the immune system of a single (adult) human being.
   - A skin cell (and these are continually shed) has the same genotype as the fertilized egg and, by this set of arguments, is also a human being by itself. (And the same holds for almost all human cells in the body.)

   Implications:

   - Because, many many more fertilized eggs never result in a live birth, we are in a public health crisis because of all the human deaths that follow whenever fertilization takes place.
   - Discarding unused embryos during IVF treatments would constitute killing living human beings.
   - For some, research using embryonic stem cells becomes morally problematic.
   - If we accept that humans have souls—and that is a very big *if*—whenever identical (monozygotic) twins are formed, and that happens post-fertilization but before gastrulation (see below), a single soul becomes multiple souls.

[1] To find out who supports each of these positions, look at that book.

[2] In what follows, the term "fetus" is intentionally being avoided for early stages of embryonic development and not being defined precisely so as not to bias the question of when an embryo becomes human as *may* be suggested by referring to a fetus. Nevertheless, it should be kept in mind that most developmental biologists have no problem with "fetus."

Remarks:

- This has been the position of the Catholic Church since about the end of the nineteenth century.
- This position is endorsed by much of the (U.S.) anti-abortion movement(s).

2. **Gastrulation**:

Rationale: This is the stage, around 14 days after fertilization, that the embryonic cells lose pluripotency, are no longer stem cells, and begin the process of differentiation and specialization into the body's various tissue types. The embryo loses the ability to twin.

Arguments for:

- This is the stage at which the embryo acquires a kind of biological *individuality*.
- From a theological perspective, this definition avoids the twin souls problem.

Arguments against:

- Biological individuality does not entail humanness, a trivial point that seems to be missed in these discussions.

Implications:

- Views the use of stem cells for research as unproblematic.

Remarks:

- Not much different from the fertilization definition when it comes to the question of permissibility of most abortions. In many instances, women only realize that they may possibly be pregnant around the time of gastrulation which is when there would be a missed period. (However, for many women, missing a single period is not so uncommon as to suggest pregnancy immediately.)

3. **Acquisition of Human EEG Pattern**:

Rationale: Loss of the human EEG (electroencaphelogram) pattern is legally taken to define the moment of human death; by symmetry, its emergence (roughly at 24 -27 weeks after fertilization) should be taken to be the beginning of human life.

Arguments for:

- If we think that being human consists mainly or primarily of having human mental capacities, then this definition *may* satisfy that criterion for being human (in the sense that the presence of the characteristic EEG pattern *may* indicate human mental activity).
- There is good reason to accept that our brains make us, humans, who we are and, therefore, characteristic brain activity is a good indication of humanness. (This reason targets the brain without saying anything about the mind.)
- The lungs start maturing at this stage (around 25 weeks) and are critical for a baby to be able to breath and survive after emerging from the womb.
- This is also the time at which a fetus becomes viable in the sense of being able to survive outside the womb though only with some medical help.

Arguments against:

- The definition relies on an assumption of biological (neurological) reductionism, in particular, in the first argument above, the mind can be reduced to brain.
- Moreover, it assumes on the basis of correlations alone that EEG pattern is the relevant brain feature.
- Temporal variability in the onset of the characteristic EEG pattern suggests uncertainty about when the embryo becomes human (but this may be a practical problem rather than one for the adequacy of a definition).

Implications:

- Provides a rationale for permitting abortion that is very similar to the intent of *Roe vs Wade* in U.S. law.

Remarks:

- In contrast, for instance, to the genetic view of humanness assumed in the fertilization definition, this is a neurological definition of being human.
- For many, this stage seems far too late when they are thinking about the permissibility of abortion.

4. **Viability**:

Rationale: Being able to survive outside the womb (at 24 -27 weeks) makes the embryo/fetus a human being in the very strong sense of having the potential to become an adult with autonomy and membership of human society.

Arguments for:

- The definition is based on a notion of autonomy that seems to capture much of how we should think of human beings.
- How we should treat a viable fetus seems identical to how we should treat a newborn. Relying on the event of birth seems arbitrary and, if insisted upon, suggests that the relevant stage is birth rather than becoming viable.
- This definition picks out the same stage as the use of the EEG pattern.
- Reminder: The lungs start maturing at this stage (around 25 weeks) and are critical for a baby to be able to breath and survive after emerging from the womb.

Arguments against:

- Why should being human be equated with the ability to survive outside the womb? Especially as some medical help would be required? Why not at least move the stage back to the earliest stage at which, with all possible medical help, the fetus can survive outside the womb?
- The onset of this stage keeps on changing with improvement of medical technology. We have no non-arbitrary way of limiting what technologies should be permitted in the use of this definition.

Implications:

- Reminder: Provides a rationale for permitting abortion that is very similar to the intent of *Roe vs Wade* in U.S. law.

Remarks:

- Supported by most of those who, in the U.S., support abortion rights.
- Reminder: For many, this stage seems far too late when they are thinking about the permissibility of abortion.

5. **Birth**:

Rationale: This is the stage when the fetus become independent of the mother with its own functioning circulatory, respiratory, alimentary, and nervous systems.

Arguments for:

- Like fertilization, this is a discrete stage with a definite end, typically taken as the cutting of the umbilical chord and thus recognizing that the baby is capable of breathing and getting oxygen on its own.
- The first breath changes the internal anatomy of the baby. The air pressure closes a flap in the heart separating blood circulation to the lungs from that to the rest of the body (Gilbert and Pinto-Correia 2017, p. 92). The umbilical cord may now be cut because it is no longer necessary for oxygen transport.

Arguments against:

- Fetuses are viable long before a full term (unassisted) birth.
- Many human features, apparently including some language learning ability, are present before birth.

Implications:

- Would justify extreme versions of abortion-on-demand.

Remarks:

- Birth has always played a crucial cultural role in human societies.

This list should not be viewed as comprehensive. Other proposals include the onset of heartbeat (though this is more of an emotional appeal than based on argument) or the ability to feel pain (though this is characteristic of all sentient creatures rather than only humans).

References:

Gilbert, S. and Pinto-Correia, C. 2017. Fear, Wonder, and Science: In the New Age of Reproductive Biotechnology. New York: Columbia University Press.

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