

Origin of Life: The Reconciliation of Embryonic Stem Cell Research Between Divergent

Religions

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Abstract

Embryonic stem cell research is a field of study that continuously develops. From the commencement of science, starting with philosophers such as Aristotle to modern science, different religions have always seemed to take opposing sides concerning the beginning of life. This issue is crucial, as one's religious affiliation offers insight into what it means to be human and the moral status of an embryo. The question asks whether an agreement between religions is even possible, and if so, how would it look? Research has shown that there are several approaches to provide insight to this question, those being religious, philosophical, and scientific perspectives regarding the ethics of embryonic stem cell research, although it is not clear if any of these views can provide a concrete answer for the pressing issues formed by embryonic research. Although these ideas cannot necessarily propose a solution for this kind of research, they can provide a framework to understand the foundations of the argument and why differing religions have conviction for their beliefs.

Keywords: embryonic stem cells, reconciliation, ethics, religious perspectives, scientific perspectives

“Differences hold promise or peril. Our differences are deep and potentially divisive. However, they are also a gift that can lead us into constructive conversation about our faith and its implications for our life in the world” (Gilbert et al., 2005, p. 39).

For centuries, history has proven through many conflicts, battles, and shifts in power that disputes between different religious groups have been, and continue to be a prevalent issue. Disagreements between different religions present themselves in a multitude of areas, such as philosophy, religion, and science, which address the origins of human beings. The argument concerning the beginning of life is a complex argument that appears to pull those of opposing religions worlds apart, and the answer to this question is crucial for conducting embryonic stem cell research. The general attitude of individuals of different faiths towards their opposing ideas is not an optimistic one, as described by Ronald Cole-Turner, one of the authors of *God and the Embryo*: “everyone has an opinion, it seems, and no one likes anyone else’s opinion” (Waters and Cole-Turner, 2003, p. 8). The intolerance that lives between religious groups weakens the relationships they share and serves as a juxtaposition with the harmony that is supposed to be achieved in some form with each religion. Despite the immense differences between those of contrasting religions, as the quote above states, our disparities can be a gift to us to challenge and question others, if they are used correctly. We do not always take our differences and use them to benefit in a debate, however, leading us to question, “How can those of differing religious backgrounds reconcile their beliefs of embryonic stem cell research with one another when their religious beliefs are what determine their conviction?” Although the debate over embryonic stem cell research appears to have an uncertain solution, we can encourage reconciliation by expressing tolerance towards conflicting religious groups.

Defining the Embryo and How it is Used for Research

An embryonic stem cell is an “undifferentiated” cell, meaning that it does not have the capability to perform specific tasks for the body yet (Yu & Thomson, 2018). While an embryonic stem cell does not have a specialized function, it does, in fact, have the ability to become any cell type in the body, which is called a “pluripotent” cell (Barry, 2012, p. 238). If the body needs blood cells, for instance, they can be made from embryonic cells (Everyday Mysteries, 2018). This applies to other cells as well, such as a bone cell or a liver cell. However, if a cell is multipotent, like an adult stem cell, the types of cells that can be made are limited (Everyday Mysteries, 2018). For instance, “a [multipotent] blood stem cell can develop into a red blood cell, white blood cell or platelets” (Everyday Mysteries, 2018). While the multipotent cell is capable of growing into blood cells, it cannot create other cells such as skin cells or liver cells (Everyday Mysteries, 2018).

While it is important to know what embryonic stem cells are, it is equally important to know where they come from. Embryonic stem cells usually come from in vitro fertilization, a practice often used by couples who are unable to produce offspring (Collins, 2006, p. 251). During in vitro fertilization, the mother goes through hormone therapy to allow her to produce several eggs in one setting (Collins, 2006, p. 251). When the eggs arrive at the uterus, they are extracted and placed into a petri dish where they will be fertilized by the sperm of the father (Collins, 2006, p. 251). Once the sperm fertilizes the eggs and they start dividing, it is decided which eggs are likely to survive without abnormalities, and these eggs are implanted into the mother (Collins, 2006, p. 251). The unused eggs, however, are frozen until used for further research. (Collins, 2006, p. 251). The moral status of the embryo is brought into question. Is it ethical to freeze what is considered a human, or is it even considered a human? The argument for

or against embryonic stem cell research is complex, and is divided into subcategories of philosophy, religion, and science. These methodologies help us become more informed about the different ways that religions such as Islam, Hinduism, and diverse denominations of Christianity approach ethics of embryonic stem cell research, and gives us a starting point for the attempt to reconcile these views.

Understanding the Debate: Arguments Supporting Embryonic Stem Cell Research

The question “what does it mean to be human?” is a question that has been asked for many centuries, and has yet to come to a uniform conclusion. Over the years, popes, philosophers, theologians, and scientists have contemplated this question, and ended up with quite insightful, but differing opinions. While these perceptions cannot provide a solid conclusion to this argument, they will stimulate conversation about the meaning of life amongst different religious groups.

From a philosophical point of view, one way to approach the embryonic stem cell argument is through Utilitarian ethics, founded by English philosopher Jeremy Bentham (*The History of Utilitarianism*, 2009). According to the article by Stanford University, “utilitarianism is generally held to be the view that the morally right action is the action that produces the most good” (*The History of Utilitarianism*, 2009). In other words, an action is not inherently incorrect, as it is based on the outcome of the action (*The History of Utilitarianism*, 2009). If this is true, then it is logical to infer that researchers have the right to destroy embryos if millions of suffering individuals can be of benefit. For instance, those of United Methodist faith tend to support embryonic stem cell research if it will be beneficial to patients who are suffering from a genetic illness (Jafari, 2008, p. 84). The Methodist church appears to lean towards the utilitarian philosophy, seeking happiness for the greatest amount of people.

While this view appears simple enough, other aspects complicate the issue further. Bentham “identified the good with pleasure” and believed that “everyone’s happiness counts the same” (The History of Utilitarianism, 2009). What is to be done in a case such as embryonic research where the divide is deep and many are opposed to such research? The answer boils down to a decision that each individual will make. It becomes a debate over which individual will benefit more from the consequence, the embryo or the afflicted patient. Is it more beneficial for the common good to destroy an embryo and cure countless sick individuals or save an embryo and leave many humans to suffer? To a Utilitarian, it would be better to sacrifice an embryo and “maximize the overall good” of the population (The History of Utilitarianism, 2009).

It is important to consider not just the Utilitarian argument, but insights from individuals that could have approved of this idea. Theologians Augustine of Hippo and Thomas Aquinas appear to be two voices from long ago who would be in favor of embryonic stem cell research today due to their philosophies concerning the concept of delayed hominization. Delayed hominization favors the moral status of a human to be achieved not at the time of conception, but at some point succeeding conception (Barry, 2012, p. 155). Aquinas’ work *Summa Theologica* expresses his beliefs regarding hominization, saying Aquinas considered it unethical to kill the fetus when the “ensoulment of the living human” has occurred. (qtd. in Brind’Amour, 2007a). If ensoulment has not happened yet, then it would still be considered ethical to conduct research on embryonic stem cells because they would not yet be considered human.

Similar to Aquinas, Augustine of Hippo “considered the progression of life in the womb to begin with a vegetative or plant-like existence and soul, then an animal soul, and finally a human soul with the complete moral value of a human being” (Brind’Amour, 2007b). This shows that Augustine perceived the process of hominization as a sequence, possibly considering

the point of conception as a “vegetative” state and the achievement of official moral status to be sometime successive to conception. If it is true that an individual does not attain moral status until a time after conception occurs, then it would also be true that research on cells that are not considered human when they are being extracted is an ethical practice.

Analogous to the views of Augustine, Islamic belief regards hominization as a process. In the Islam religion, the embryo is not considered a human until one-hundred and twenty days after conception, or four months (Jafari, 2008, p. 81). This conclusion is taken from chapter 23: 12-13 of the Qur’an, saying:

We created the human being from a quintessence of clay, then we placed him as semen in a firm receptacle, then we formed the semen into a blood-like clot, then we formed the clot into a lump of flesh, then we made out of that lump, bones and clothed the bones with flesh, then we developed out of it another creation, so Blessed is Allah the Best Creator (qtd. in Barry, 2012, p. 157).

This verse depicts the development of an individual from when it was considered “clay,” or a cell which was molded by Allah, to a completely developed fetus. The individual becomes human after “its systems are completed, fat [accumulates] under the skin, and the fetus moves into position for birth” because following this step is the formation of a human according to the Qur’an (Barry, 2012, p. 151). This process occurs at twenty-four weeks, or around five months, of the third trimester of pregnancy, which aligns closely with the point of hominization in the Islamic faith (Barry, 2012, p. 151). Generally, Muslims would not have an issue with embryonic stem cell research because of the period which they consider the individual to become human.

Analogous to the Islamic faith, the neurological view would permit the use of embryonic stem cells for research. According to Barry, the beginning of “cerebral function” determined by

an electroencephalogram (EEG), which would be around twenty-seven weeks, is one interpretation of the beginning of life (Barry, 2012, p. 159). This is determined by what it means to be deceased, which is the “loss of cerebral function” (Barry, 2012, p. 159). Another way of determining the beginning of life in this view would be the start of brain activity, which would occur around the twenty-fourth week (Barry, 2012, p. 159). The French philosopher Rene Descartes would support this view, as he would regard “the quality of conscious awareness to define a human individual” (Gilbert et al., 2005, p. 44). According to the phrase “I think therefore I am” by Descartes, we only know that we exist because we think we exist (Watts & Livingston, 2011). Descartes believes that we exist because we are capable of defining ourselves in that way, therefore providing insight into the neurological view.

Understanding the Debate: Arguments Opposing Embryonic Stem Cell Research

While there are a multitude of arguments in favor of embryonic stem cell research, it is not an approach that is agreed upon by everyone. Disagreements on this topic are seen in philosophical, religious, and scientific views of humanity. While a complete answer to this argument may never be reached, it is important to be informed of the basic arguments that are generally referenced by philosophers, theologians, and scientists.

According to the beloved nineteenth-century poet and Kantian philosopher Henry David Thoreau, sometimes “a people, as well as an individual, must do justice, cost what it may” (Coquillet et al., 2010). This is often a difficult principle to hear, but in some instances, it is the best course of action. Philosophy is a complex area of study that is essential for several reasons, one being that it can be used as a guide to make hard judgment calls in everyday life. One area of philosophy that helps in the understanding of difficult cases, such as the embryonic stem cell debate, is that of Kantian ethics, supported by German philosopher Immanuel Kant. According to

the Kantian belief, under no circumstances is murder of any kind allowed, regardless of if it would be the choice that benefitted the most individuals (Kantian Ethics). This leads to the assumption that “a person’s actions are right or wrong” and there is no in-between area (Kantian Ethics). In the embryonic stem cell argument, the Kantian approach would be to do what is morally right, even if it is not for the best of the people (Kantian Ethics).

Kantian ethics can be utilized not only to provide a basis for difficult decisions, but also for interpreting scripture. Certain scriptures reason that God knows a child before it is born. In Jeremiah 1: 4-5, this case is argued, “Now the word of the Lord came to me saying, “Before I formed you in the womb I knew you, and before you were born I consecrated you; I appointed you a prophet to the nations” (Jeremiah 1: 4-5, The New Revised Standard Version). In these chapters, God is telling Jeremiah that he was aware of his presence before he was put on the earth (Mitchell, 2010). By reading this verse, it seems that the embryo has a distinct purpose regardless of whether it is separated from the mother or not (Mitchell, 2010). While embryonic research is conducted in hopes of finding a cure for diseases, the embryo is still being destroyed, and that is immoral from a Kantian perspective. There could be millions of individuals that could benefit from embryonic stem cell therapy, but it cannot be performed if the embryo will be destroyed.

While the verse used above brings up valid points to consider, the Kantian view could be opposed by those in support of embryonic stem cell research. It is important to know that the Bible was not designed to answer scientific questions. Given the time in which the Bible was written, ethics of embryonic stem cell research were not a topic of conversation for the authors of the various books of the Bible. The authors were not aware of the process of fetal development, allowing them to write scripture from a non-scientific point of view. Regardless of which

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interpretation of this verse is preferred, both of them bring interesting thoughts about ethics into play, allowing conversation about these issues to develop.

Kant mentions the importance of universal ethics, defined as “ethical principles for everybody” (Kantian Ethics). This implies that any activity, such as murdering, stealing, or lying could be acted upon by anyone anywhere (Kantian Ethics). Are humans comfortable with the idea of all citizens of the world legally performing the actions that have been suggested (Kantian Ethics)? If one is not willing to witness their proposal become a reality, it would be reasonable to believe that this action is immoral (Kantian Ethics). According to Kant, for one to say that it is ethical to conduct embryonic stem cell research, they are essentially condoning murder (Kantian Ethics). This statement asks us where the line is drawn. Is it acceptable to destroy an embryonic cell but not a human being? Most individuals would not support the capability of freely murdering another human. These questions could make one contemplate if the embryo is considered a human being after all. For instance, if an embryo is a human, why is one jailed for the murder of a human but not of an embryo? Could that mean there are in fact exceptions to this rule? While many individuals largely oppose this side of the argument, it is important to understand that Kant encourages us to do the right thing regardless of what ends up becoming of the situation.

Principles of Kantian ethics are expressed through the idea of immediate hominization instituted in the Roman Catholic Church by Pope Pius IX (Barry, 2012, p. 155). The term immediate hominization refers to the immediate formation of a human, which occurs at the time of conception (Barry, 2012, p. 155). Pope Pius IX, as well as many other Roman Catholics or those affiliated with the Southern Baptist Convention, regard the moral status of a human to

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begin as soon as the sperm meets the egg and fertilizes it, ruling out the idea of embryonic stem cell research entirely (Jafari, 2008, p. 81).

By expanding on the beliefs of Roman Catholics, it is evident why they disapprove of embryonic stem cell research. In the Roman Catholic belief, “full moral status is obtained at conception” (Jafari, 2008, p. 81). In other words, when the egg and sperm from the parents are fertilized, the zygote becomes a human (Mitchell, 2010). This view is supported by looking at the human from a genetic standpoint. When the being forms at fertilization, it receives unique genetic traits from the egg and sperm, or mother and father (Mitchell, 2010). Dianne Irving, a Catholic biochemist, has an insightful perspective on the beginning of life from the Catholic faith, saying:

There is no point from fertilization to death when the nature of a human being changes at all; it keeps on continuously creating specifically human enzymes, proteins, tissues, and organs – which only a human being can do. Scientifically, the immediate products of fertilization are the same – an already existing, living, unique, individual, embryonic human being and person. (qtd. in Barry, p. 153)

Irving makes the point that from a scientific perspective, there are no markers that identify when one becomes a human except for conception. Based on Irving’s insight, it can be assumed that there are no certain characteristics that can point directly to the phase of development in which a child officially becomes an adult. At some point, however, it is known that a child will be considered an adult, but what characteristics would be used to assume this? It would be difficult to determine when a child would become an adult, just as it would be difficult to determine when an embryo would become a human, except for at the time of conception. For

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those of Roman Catholic faith, the beginning of life is at conception, and it is, therefore, unethical to research embryonic stem cells.

Similar to the Roman Catholic faith, the Southern Baptist Convention (SBC) does not support the use of embryonic stem cells for any purpose (Gilbert et al., 2005, p. 39). The SBC offers a Kantian point of view in this argument, following the morality of what they believe is right based on scripture. The SBC does not approve of embryonic stem cell research for any reason because they believe that life begins at conception, and research would harm the embryo.

While the Hindu belief is not comparable to Christianity in every way, it is alike in the fact that it does not support the idea of embryonic stem cell research. However, the reasoning for this belief is different than in Christianity. While Roman Catholics and Southern Baptists disapprove of embryonic stem cell research because they consider life to begin at conception, Hinduists condemn embryonic stem cell research because of karma (Gilbert et al., 2005, p. 40). Reincarnation is important to Hinduists because the individual's fate is influenced by karma (Gilbert et al., 2005, p. 40). Hindu teaching considers any "act of violence" to negatively affect the outcome of one's reincarnation (Gilbert et al., 2005, p. 40). According to the sacred writing of Hindu belief, the Vedas, embryonic stem cell research would be considered "the murder of an unborn soul" (Gilbert et al., 2005, p. 40). It does not matter what the reason for embryonic stem cell research would be, it is still considered murder in the Hindu faith. In order to be at peace with Brahma, one of the most important gods in Hinduism, one should not commit murder, and therefore embryonic research is pronounced unethical (Gilbert et al., 2005, p. 40).

The idea that life begins at conception is a critical point in the genetic view, a scientific perspective regarding the beginning of life. Those who support the genetic view believe that human life begins at conception, the fusion of sperm and egg because that is when the genetic

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material becomes exclusive to the new being (Barry, 2012, p. 158). This scientific view has been adopted by the Roman Catholic Church and the Southern Baptist Convention as the general protocol for determining the moral status of an individual. While these religious groups have adopted this perspective for the beginning of life, there is some controversy behind its reasoning. According to research conducted by Scott F. Gilbert, researcher and professor of biology at Swarthmore College, the *New England Journal of Medicine* questions if the presence of genetic material is the essential requirement that would make one human (Gilbert et al., 2005, p. 43). The argument is in fact that the embryo contains all of the genetic material necessary to consider it a human, but what about a skin cell, or a muscle cell? Both of these cells have genetic material, but these cells would not be considered human (Gilbert et al., 2005, p. 43). It is true that the presence of genetic material is a determining factor of the beginning of life in the genetic view, but it is uncertain for some if this information alone is enough to consider the being a human, as this is a question that will be answered differently according to the specific values of the individual in question (Gilbert et al., 2005, p. 39).

While the genetic view proposes the beginning of life at conception, or the point when the zygote has its own genetic material, the embryological view opposes this view due to the possibility of twins forming during this time up to day twelve (Barry, 2012, p. 159). This would mean that an individual would not truly be his or her own person until at least day twelve because that would signify the possible time in which twins could be formed, as twins are considered separate individuals (Barry, 2012, p. 159). According to Barry, “the embryological view would also allow contraception, including ‘morning-after’ pills and contragestational agents, but not abortion after two weeks” (Barry, 2012, p. 159). This view accepts that the cell is not considered human until after a two-week period. If it is true that the unborn is not considered

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a human until it is two-weeks old, then embryonic stem cell research would not be considered an ethical practice because it would violate the moral status of the embryo because the cell becomes an embryo in the third week after conception (Barry, 2012, p. 151).

Reproductive Ethics: The Stages of Personhood in Pregnancy

In order to further understand the basis for different religious, philosophical, and scientific arguments, it is crucial to understand fetal development throughout all three trimesters of pregnancy, as certain milestones in fetal maturation will highlight controversy in a couple of areas. According to the American Pregnancy Association, the first trimester of pregnancy is when the fusion of sperm and egg occurs, along with the reception of genetic material from the parental sex cells to the zygote, and this happens during the first week after conception (Fetal Development, 2016). During the third week, the embryo begins to undergo the process of development, signaling the very first signs of organ formation (Fetal Development, 2016). The fifth week is when the heart of the embryo starts to beat, and this can become a point of controversy for one who might consider life to begin at the heartbeat (Fetal Development, 2016).

While the first trimester deals with the beginning development from a zygote to a fetus, the second trimester further develops the organs of the body of the fetus (Barry, 2012, p. 151). During the second trimester, an event called “quickening” occurs, defined as “the point at which a pregnant woman can first feel the movements of the growing embryo or fetus” (Brind’Amour, 2007c). This point in the maturation of the fetus could become a pivotal point in the debate of its moral status — Theologians Thomas Aquinas and Augustine of Hippo regard “quickening” as the point in which the individual becomes a human, not conception (Brind’Amour, 2007c). From the point of view of these two theologians, life begins around sixteen weeks after conception, as this is the point that “quickening” occurs in the second trimester (Barry, 2012, p. 151). This once

again leads us to ask the largely debated question, “what does it mean to be human?” Is it the point of conception, the point of quickening, or neither? The controversy over this issue continues as more ideas to when life begins are uncovered.

During the third trimester, the fetus finishes growing and developing, and at the end of this trimester, will be brought into the world (Barry, 2012, p. 151). In this time period, the fetus will “experience the self/other perceptions that form the basis of human consciousness,” around week twenty-seven when electrical activity in the brain is first stimulated (Barry, 2012, p. 151). This would be the basis of the argument for one who aligns with the neurological point of view, saying that the fetus has acquired brain function, and can therefore be considered a human. The development of an individual from an embryo to a fetus along with philosophical, religious, and scientific views gives us ample information about the characteristics that could consider one to be human. While our views can cause dispute among us, they can also bring us together by examination and appreciation of how we are all different from one another, if we choose our words wisely.

Can Divergent Beliefs of Embryonic Stem Cell Research be Reconciled?

The Bible calls for seeking tolerance in everyday life. The Apostle Paul invites us to take Ephesians 4: 1-6 into consideration when disagreements arise, saying:

I therefore, the prisoner in the Lord, beg you to live a life worthy of the calling to which you have been called, with all humility and gentleness, with patience, bearing with one another in love, making every effort to maintain the unity of the Spirit in the bond of peace. There is one body and one Spirit, just as you were called to the one hope of your calling, one Lord, one faith, one baptism, one God and Father of all, who is above all and through all and in all (Ephesians 4:1-6, The New Revised Standard Version).

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Paul is calling us to reconcile our differing views with others by becoming patient, showing compassion, and keeping peace with others. Tolerance is not an attempt to endure the behavior of someone else, it is the ability to disagree with one another over controversial issues and still hold each other's opinions with reverence. That does not go to say that one has to support every belief that an individual has, but they should learn to respect their values and engage in thoughtful conversation with them. The ethics of embryonic stem cell research are not ideas that can easily be reconciled, and our differences are often substantial, but we can begin to work through them by learning to be tolerant of others and their beliefs.

While the Bible provides an approach on how to reconcile our beliefs with others, it does not heavily cover what can be done to reach a uniform consensus in the field of science. According to research performed by Mahtab Jafari and her colleagues, author Ronald Cole-Turner suggests "the majority of these moderate Protestant denominations balance these two divergent views by encouraging research on finding alternate sources of stem cells (Jafari, 2008, p. 84). These "alternative sources of stem cells" could include adult stem cell therapy. This is a way to conduct stem cell research and not harm an embryo, as they are "found among differentiated cells in a tissue or organ (Stem Cell Basics, 2018). While the body systems that an adult stem cell can treat are limited, all religious groups can support this research without dismissing their own spiritual beliefs because this argument is not concerning the moral status of the embryo. While this sounds like a thoughtful solution, it does not address the argument of embryonic stem cell research. It avoids the argument entirely because it is concentrating on adult stem cell research, not embryonic stem cell research. Adult stem cell therapy is not a controversial issue, because science has discovered that it is an ethical practice. However, the same cannot be said about embryonic stem cell research. It is reasonable to conclude that

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reconciliation between differing religious groups and embryonic stem cell research is a request that is far too complex to ever be completed. Acts of tolerance from individuals can point toward reconciliation, but this alone will likely be unsuccessful in finding a resolution to the issues at hand because the disagreements on this issue are so widespread and so much is at stake.

Philosophical, religious, and scientific viewpoints cannot provide a uniform answer to this question, so it is up to each individual to search within themselves to form their beliefs, and have appreciation for the beliefs of others when they are formed.

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