The Image of God in an Early Embryonic Zygote

Daniel J Coughlin

Systematic Theology 1: Scripture, God, and Man

Dr. Renton Rathbun

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Then God said, "Let Us make man in Our image, according to Our likeness; and let them rule over the fish of the sea and over the birds of the sky and over the cattle and over all the earth, and over every creeping thing that creeps on the earth." God created man in His own image, in the image of God He created him; male and female He created them. God blessed them; and God said to them, "Be fruitful and multiply, and fill the earth, and subdue it; and rule over the fish of the sea and over the birds of the sky and over every living thing that moves on the earth." Genesis 1:26-28

Man is a unique part of creation because he was created in the image of God. God created the man Adam as His image and His glory. But Adam was uniquely created as a functioning, intelligent man. He was created capable and moral. The same was true with the woman Eve. The two of them together, before the fall, were given the command to be fruitful and multiply. To multiply themselves was to multiply the image of God, to engage in a new process. "Now the man had relations with his wife Eve, and she conceived and gave birth to Cain" (Genesis 4:1a). Cain was the new image bearer that resulted from the relation between Adam and Eve. In light of today's controversy around abortion and advances in our observations of developmental biology, we should more clearly understand that the image of God is in a new child as early as the zygote stage of the embryo, which is immediately post-fertilization. It's at this point that the new child is physically distinct from its mother, functionally distinct, and has individual needs that he communicates with his mother.

Every man is individually created in the image of God, even after the fall. Image bearing is not unique to Adam among men. This is clear from God's warning that "Whoever sheds man's blood, By man his blood shall be shed, For in the image of God He made man" (Genesis 9:6). It is ironic that Cain is the first zygote, since he took the life of his image bearing brother Able. In the same way, it's ironic that developmental biologists who study life by destroying it are the ones to provide such a beautiful testimony of God's image in the early embryonic stages. The reality is that much of the research that I cite in this paper is the result of in vitro fertilization of

human embryos, which resulted in the destruction of that child. That we can learn of the image of God in an early-stage embryo from the results of their wicked destruction of life is a grace of God.

Unlike developmental biologists' study of mammalian embryos, there is no way to dissect the image of God from a person to examine it. Further complicating our understanding of the image of God is that we are 'it' as well. There is no way to escape ourselves and objectively look at these humans. In order to understand the image of God, we must read what God has told us about how He created us and compare ourselves with other created beings like Angels (living spirit, no bodies) and the plants and animals (living bodies, no spirits). This has led to "extensive debates about the image of God" that "arose from partial definitions: human rationality, dominion over creation, freedom of the will, or moral qualities such as love or justice" (Bavinck 2011, 319).

Various views on the image of God have come and gone, such as the anthropomorphite view that was popular in the 4th century, which argued that man is physically in the image of God. Another was the naturalist view, popularized by Pelagius, which viewed the image of God in man in a way that "emphasized freedom of the will with holiness as a good to be achieved by moral effort" and that "the God-given possibility of perfection cannot be lost" (Bavinck 2011, 319). Opposing the naturalist view is a Scriptural view that likened the "gift of positive holiness" that was "immediately received at creation but, lost in the fall, was regained only through Christ" (Bavinck 2011, 319).

The modern Reformed view of the image of God in man is two-fold. First, the image of God is retained in the post-fall man's essence. This is the wider sense of the image of God that includes man's moral agency and which "remains unchanged in fallen man" (VanTil 2007, 50).

This wider sense of the image of God of the "I" that makes a man a person. It's the idea of the distinct self. That which makes me into a "me." Kuyper defines this "I through which man is a person" into two capacities: "the capacity to know and the capacity to will." (VanTil 2007, 50, quoting Abraham Kuyper's Het beeld Gods (The Image of God), 62).

Second, in the narrower sense, the image is in man's moral excellency: his holiness, righteousness, and knowledge of the truth. This moral excellency was the gift of God to Adam at creation. Adam was created with original holiness, with a love for God that mirrored God's love for God. Adam was created with an original righteousness due to his constant communion with God. And Adam was created with covenantal knowledge of the one true God, His attributes, and His work. These characteristics generally define the nature of man, compared with the wider sense of the image of God that relate to man's essence.

While it's helpful to view nature and essence separately, it's important to note that there is no "absolute and artificial separation" (VanTil 2007, 53) between man's nature and essence. Both the fall and regeneration affect man's nature and essence. But the effects of the fall and regeneration are greater on the narrower sense of the image of God in man's essence.

In identifying evidence of the image of God in the early embryonic-stage zygote, I am focusing on the wider essence sense of the image of God. The image of God in man's essence of the "I through which man is a person" is broken down into two parts: (1) the capacity to know and (2) the capacity to will. Since it is impossible to interrogate a zygote directly, indirect evidence of knowledge and will must suffice.

During fertilization, two haploid gamete cells–a sperm and an egg, each containing 23 chromosomes–combine to form a diploid zygote that contains a complete set of 46

chromosomes. At this point, the information of the zygote is different than either its mother or its father. He has a unique set of genetic information that will define his person.

Functionally, however, the zygote remains under control of the processing of that unique genetic information. This overlap of functional control happens because "maternal factors contributed by the egg cytoplasm initially control development, while the zygotic nuclear genome is quiescent" (Lee, Bonneau and Giraldez 2014). The stage of embryogenesis where "developmental control transitions from maternally provided factors to ones produced by zygotic (embryonic) transcription" is called the "maternal-to-zygotic transition" (Lee, Bonneau and Giraldez 2014). This maternal-to-zygotic transition occurs "by 1-cell stage" (ibid), which means the developmental control of the newly formed, 12-hour old zygote before cellular division starts to occur. Not only does the 12-hour old zygote begin to express his own RNA and proteins, but during a process called "maternal clearance" the zygote programmatically destroys the RNA and proteins from the maternal cytoplasm. The single cell zygote operates in a manner that is genetically and functionally distinct from his mother already. This genetic and functional difference is expressed at an intracellular level since one cell is all a zygote has. But it shows purposeful, independent control that is functionally distinct from his mother.

In addition to functional distinction, there is also a physical distinction. The fertilized egg always maintains his distinct from his mother. Despite being a microscopic process, there is always a physical distinction between the body of the zygote and the body of the mother. This distinct human zygote "is only 100 μm in diameter barely visible to the eye and less than one-thousandth the volume of a Xenopus [frog] egg" (Gilbert 2003, 314). Even during implantation, it is the embryo's external trophoblast layer of cells that "forms the tissue of the chorion, the embryonic portion of the placenta" (Gilbert 2003, 316) and does not produce embryonic

structures. The developing child is separated by his own layer of cells/tissue that separates the child from his mother. This physical distinction is clear from ovulation and is maintained through fertilization and implantation. This demonstrates that the unique, genetically- and functionally-separate child maintains a distinct identity despite attachment and dependance on the mother's womb.

As part of that physical distinction and zygotic developmental control, there is a self-referential element to the zygote that is independent of his mother and demonstrates a sort of self-knowledge. "The first cleavage is a normal meridional division; however, in the second cleavage, one of the two blastomeres divides meridionally and the other divides equatorially" (Gilbert 2003, 315). This means that as early as the four-cell stage, while the newly formed zygote is traveling through his mother's oviduct, there is already extracellular organization and structure that is taking place independent of his mother. This occurs within 24-36 hours after fertilization. Instead of cellular division occurring relative to the mother, the cellular division occurs relative to the zygote's own cells. This is shown at the two-cell stage, where the two cells cleave in planes that are perpendicular to one another. The zygote continues to self-organize into a specific form that becomes the body that we recognize, which is only possible due to the zygote's own self-knowledge of his orientation.

This self-organization includes differentiate into parts such as the chorion that "enables the fetus to get oxygen and nourishment from the mother…[and] secretes hormones that cause the mother's uterus to retain the fetus, and produces regulators of the immune response so that the mother will not reject the embryo as she would an organ graft" (Lee, Bonneau and Giraldez 2014). Without words, the fetus is responsible to chemically communicate with the mother on his own behalf, from one organism to another. Now at the blastocyst stage of embryonic

development, the blastocyst communicates his need. The mother's uterus responds with hospitality and provisions. This basic form of communication also indicates a sort of knowledge. In the same way that a baby cries because he is hungry, the same child secretes hormones for nutrition within the womb.

There are many Christians objections to a zygote having the image of God. The Francis Collin's group Biologos, for example, states:

> *"But let's be honest, can we say in modern language that the embryo is an image bearer? Can we say the same things about an embryo that we can say about more advanced humans? Well, we need to be honest—the human biblical authors didn't know about blastocysts. So that's a problem. The Bible is pre-scientific in that way" (Hardin 2020) .*

I start with this objection because it is the most straightforward to address. Scripture testifies about itself as being divinely inspired (2 Pet. 1:19-21, 2 Tim. 3:16, 1 John 5:9, 1 Thess. 2:13, See WCF1.IV). The human authors were carried along to speak truth that was greater than they understood. So this is really no argument at all. The God who created embryos and all of their intercellular organelles is the God who inspired the Biblical authorities. The argument is not that more advanced humans are the same as an embryo. The argument is that the zygote is the image of God.

Another objection is that man does not have a soul until he breathes, based on Scripture stating: "Then the Lord God formed man of dust from the ground, and breathed into his nostrils the breath of life; and man became a living being" (Gen. 2:7). However, it's important to note the consequence of God having breathed into Man's nostrils. The consequence is not that man started to breathe. God is not a supernatural ventilator. "The breath of life is the principle of life; the living soul is the essence of humanity" (Bavinck 2011, 325).

What happened in Genesis 2:7 is that God – who does not have a body – breathed. And that breath cause man to become living. It is a common error to take a literalist approach to this text and then assume that life comes to a being when they take a breath. However, this is both a bad reading of scripture and a denial of the reality that is before us with ultrasound imagery.

Another objection is that image bearing is rooted in the intellect, and a zygote does not have a physical brain. As such, the zygote does not have the capacity for thoughts, knowledge, observations, or understanding. It is easy, as a man that is inescapably physical, to overemphasize our bodies. Scripture, however, highlights the metaphorical connection between our organs and our functions.

> *"it is inconceivable that the soul of man would be designed for the image of God and that our body would have nothing to do with it. Yet these similarities cannot, of course, be sought in the members of our body as such, but must be sought in the functions of those members and senses. With or body we see, we speak, we walk, we descend, we climb, and so much more. And in Holy Scripture, all these functions and so many more, are ascribed not only to our God, but they are ascribed in terms of the same senses and members of the body that we use for them…Of all these expressions and manifestations of life in God, an imprint has been put in man, and this imprint expresses itself through the members and senses of the body." (Kuyper 2016, 187)*

Can a body have breath without lungs for breathing? Can a body have life without a heart to pump it? Can a body have a mind without synapses to connect it? We know that God breathes without physical lungs, sees all things without physical eyes, and hears all things without physical ears. So the answer to these questions is intuitively "no," but to deny seeing without eyes is to overemphasis our physical reality and to deny the spiritual reality.

Regarding the relationship to the image of God and the body of man, Kuyper writes, "there is nothing in man nor about him that was not created for the purpose of manifesting the image of God the better, the more perfectly, and the more gloriously" (Kuyper 2016, 186). If this is true, then every man's beginning in embryonic should not be discounted. This is especially so

because, when Jesus dwelt in the flesh, he came not as a fully formed man, in the way that Adam was created. Instead, Luke writes as if Jesus, the very image of God, underwent a normal gestation. That means at all stages the human body is in the image of God, for "[f]rom the beginning, creation was so arranged and human nature immediately so created that it was amendable to and fit for the highest degree of conformity to God and for the most intimate indwelling of God" (Bavinck 2011, 327). There is certainly no more intimate of a dwelling than embryonic Jesus residing within Mary's womb.

As a microscopic single cell, zygotes admittedly do not look like a full-grown man. But we must not be deceived by appearances. Even the single stage zygote is physically distinct from its mother, functionally distinct, and has individual needs that he communicates with his mother. The zygote has an orientation, organization, and will that is distinct from his mother. This shows that the broad sense of the image of God, the capacity to know and to will, are present even in that single cell. Opening our eyes to the spiritual reality of our senses and our functions, in a way that is separate from our physical organs, is key to understanding the image of God in an unborn child.

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