

The Prenatal Origin of Myth, Religion, and Ritual

John Bonaduce, PhD

It has been a century since Otto Rank boldly broke away from Freudian orthodoxy and declared that babies at birth are sentient and highly impressionable human beings. Since then, evidence for embryonic consciousness has been firmly established with data from neuroscience, biology, psychiatry, and medicine, always tending to earlier prenatal awareness models. Some have even made the case that we remember our intrauterine lives back to existence as a single fertilized cell. And yet, the methods by which we measure and assess the emotional universe that precedes birth are limited. Mythobiogenesis, a theory developed by the author, draws on the insights of prenatal pioneers in order to open a true window into the womb. That window, not so surprisingly, is mythology, inclusive of fairy tales, sacred scripture, religious belief, and ritual. Donalt Winnicott put it economically, “Mythology may be the key to our embryological experience.” Following Winnicott’s intuition, Mythobiogenesis asserts that much of what we call mythology, fairy tales, and even sacred scripture derives from a fundamental impulse to tell the universal intrauterine

John Bonaduce, PhD, a seasoned writer for major Hollywood studios such as Fox, Paramount, and Warner Bros, developed a profound interest in story structure. Beyond the commercial objectives of the industry, his exploration led him to the belief that stories have a biological origin. This insight inspired his pursuit of deeper context through his theory of Mythobiogenesis, which he explored in his dissertation at Pacifica Graduate Institute. As a featured writer for the Joseph Campbell Foundation’s MythBlast, he passionately showcases Joseph Campbell’s enduring relevance to a modern, socially progressive audience. Correspondence concerning this article should be addressed to John J. Bonaduce, 12437 Sylvan St., No. Hollywood, CA 91606 – jbonaduce52@gmail.com

experience of life before birth in culturally specific ways. We remember conception. We tell of it in our stories. In this article, we explore the biblical narrative of Noah, correlating each story point with those found in other traditions, leading to the conclusion that Noah and his ark are nothing more, nor less, than a single fertilized cell floating toward implantation.

Keywords: Mythobiogenesis, Noah, mitosis, gastrulation, implantation

The Prenatal Origin of Myth, Religion, and Ritual

Researchers in prenatal and perinatal psychology have become increasingly confident since Otto Rank first suggested that babies remember birth. One hundred years later, Rank's assertion seems more of an understatement. Research has firmly established that the preborn enjoys a complex mental life and that memories of intrauterine existence arise *before* birth, brain formation, neurons, organogenesis, gastrulation, cell proliferation, or even cell cleavage. Some suggest that "cells remember their origins, all the way back to conception" (Verny, 2021, p. 73). If such memory exists, how would it be expressed?

Mythobiogenesis

Much of what we call mythology, fairy tales, and even sacred scripture derives from a fundamental impulse to tell in culturally specific ways the universal intrauterine experience of life before birth in a process I call Mythobiogenesis. D.W. Winnicott frequently proposed the idea of a biologically driven narrative according to this protégé R.D. Laing, who famously asked, "Is it possible for we cells to record experience before specifically neural tissue arises and to reproduce in later phases of the life cycle transforms, or variations, of such first experiences?" (Laing, 1976, p. 31).

Laing was particularly impressed with the parallels between conception in the fallopian tube and birth-of-the-hero stories: Sargon was "brought forth in a hidden place" (conception in the uterine tube) . . . whereupon his mother laid him "in a vessel made of reeds..." covered in pitch (zona pellucida, per

Laing) and dropped “down into the river” which “carried him to Akki the water carrier who lifted him up in the kindness of his heart”—which Laing equates with, in his words, “adoption by endometrium” (p. 34). The theme is echoed by the Biblical account of Moses, likewise, placed in a basket (again, the zona pellucida), floating downstream just as the blastocyst floats for some seven days before its harrowing approach to the endometrium. Failure to implant is, of course, a common cause of spontaneous abortion, a high point in intrauterine drama.

Apply Laing’s bold correlations to the story of Noah and his ark and discover apparent references to elements of the reproductive process not enumerated by Winnicott or Laing but strongly supporting their ideas.

Noah and the Zona Pellucida

Details in Biblical stories, like the details in the dreams of a troubled analysand, are important for the same reasons. They are signifiers of a veiled yet relatable reality. Consider that God tells Noah to cover his ark in pitch, just as Moses, Sargon, and Karne were carried downstream in pitch or wax-covered baskets.

God says, “Make yourself an ark of gopher wood, make it an ark with compartments, and cover it inside and out with pitch” (*The Jewish Study Bible*, Berlin, 2014, Genesis 6:14). Laing recognizes this as a reference to the zona pellucida, as do I, that water-hating or hydrophobic lipid serving, among other functions, to keep out the competition. Thus, polyspermy is prevented by consigning millions of male gametes to annihilation in a sea of female acids, others lost in the convolutions of plicae in the ampulla, others doomed by choice of the wrong fallopian tube or who somehow were left behind when the great cervical gate closed without giving them a chance. These are the elements of a naturally occurring, unwitnessed apocalypse. Unwitnessed, yet made visible in our scriptures.

Zona Pellucida: The Reality Behind the Metaphor

According to the simple principles of Mythobiogenesis, the prenatal stages of embryology generate corresponding metaphors expressed as sacred and secular narratives. Frequently, the reality behind the screen image is none other than the zona pellucida. For example, in the second book of the

Pentateuch (the first five books of the Hebrew scriptures), we encounter the famous Ark of the Covenant, a golden treasure chest, whose dimensions were stipulated by God. In terms of Mythobiogenesis, it is also the zygote encased in its lipid barrier, or zona pellucida. While the Egyptian pursuers drown pitifully in the Red Sea—the manifest plot point evoked by the latent functioning of the cervix itself—the ark is carried on wooden poles across the unforgiving desert en route to the Promised Land in imitation of the zygote/morula/blastocyst on its precarious journey to the endometrium. Appropriately, there are two tablets within the ark, just as there are two parental homologous within the fertilized cell (Britannica, 2023, p. 28).

The pursuing Egyptians have more in common with their quarry than they imagine. Their myths include unmistakable counterparts to the zona pellucida. Plutarch's (1936) account of the Egyptian origin tale resonates with the idea of a free-floating ovum heading for a rendezvous with its male counterpart. In this allusion to the zona pellucida, Osiris is tricked into entering a coffin, whereupon seventy-two conspirators nail it shut and cover it in molten lead. Like Moses in his reed basket, Osiris drifts in his sad floating sarcophagus down the Nile just as the ovum makes its stately passage through the narrow lumen of the oviduct.

In my recent article, "Plato: The Philosopher as Prenate" (Bonaduce, 2023), I identified the zona pellucida as a singular plot point in Plato's story of Atlantis. The philosopher relates how Poseidon became smitten with Cleito—improbably, the sole inhabitant of the island continent—"had intercourse with her, and [then] fortified the hill where she lived by enclosing it with concentric rings, alternately of sea and land" with the sole intent of making the spot "inaccessible to man" (Plato, 2008, p. 102). The allusion to the zona pellucida could not be more pellucid.

Then there is the disturbing bedtime story of Briar Rose, in which the eponymous briars serve the same purpose as Noah's pitch, Poseidon's rings, Israel's portable ark, and Osiris' molten lead sarcophagus. The maiden, in a state of suspended animation (commensurate with her actual role as an oocyte arrested in meiosis), is surrounded by briars enclosing her in an impassable obstacle, a death trap to every robust would-be hero attempting to make the crossing and rescue the girl.

Apocalypse on a Pinhead

According to Mythobiogenesis, we are gifted as a species with the ability to recall life at its smallest magnitude, the cellular level, restating the experience in mythological terms of the greatest magnitude. Micro becomes macro. The fertilized cell is recalled as an ark bursting with life. And the most natural occurrence of the death of millions of sperm that fail to reach the ovum becomes the premise of the biblical flood; the unmourned demise of millions of spermatozoa becomes in the sacred retelling a watery holocaust in which a pathological Deity destroys not only humankind but everything that lives, breathes, or crawls on the face of the earth. In the Genesis account, the ark contains every life form, both animal and vegetable, necessary to the total regeneration of life on Earth.

This is not altogether preposterous. Once we accept that the ark (as Laing astutely suggested) is actually a fertilized cell, we realize with a start that it does indeed contain all that is necessary for every genotype and every phenotype that has ever existed because it carries in its hold the molecule of DNA from which everything can be fashioned inclusive of those two giraffes and those two elephants and those two monkeys we see in illustrated children's Bibles.

And of all that lives, of all flesh, you shall take two of each into the ark to keep alive with you; they shall be male and female. From the birds of every kind, cattle of every kind, every kind of creeping thing on earth, two of each shall come to you to stay alive. For your part, take of everything that is eaten and store it away to serve as food for you and for them.' Noah did so; just as God commanded him, so he did. (*The Jewish Study Bible*, Berlin, 2014, Genesis 6:19)

The injunction to bring two of every kind, one male, one female—absurd on its face—is nevertheless in accord with the organizational principles governing DNA at fertilization. Twenty-three chromosomes from Mom are paired with twenty-three from Dad, and these homologous pairs become the zygote (Moore et al., 2020).

Implantation in the endometrium represents an almost Aristotelian climax in the unfolding cellular adventure; failure to implant accounts for 75% of early miscarriages. (Cleveland Clinic, 2022) The literary tension in Genesis reflects the high stakes of the moment.

At the end of forty days, Noah opened the hatch he had made in the ark, and he sent out the raven to see if the waters had lessened on the earth. It flew back and forth until the waters dried off from the earth. Then he sent out a dove to see if the waters had lessened on the earth. But the dove could find no place to alight and perch, and it returned to him in the ark, for there was water all over the earth. Putting out his hand, he caught the dove and drew it back to him inside the ark. He waited seven days more and again sent the dove out from the ark. In the evening, the dove came back to him, and there in its bill was a plucked-off olive leaf! So, Noah knew that the waters had lessened on the earth. He waited still another seven days and then released the dove once more; and this time it did not come back. (*The Jewish Study Bible*, Berlin, 2014, Genesis 8:6-12)

Where Noah depends on doves and ravens to provide evidence that the earth is receptive to his crew and living cargo, the blastocyst relies on chemical signals. Integrins, proteins arising on the surface of the endometrium and the trophoblast surrounding the embryo, are “conveying information about the extracellular environment” to the approaching zygote (Wolter, 2013, para. 6). “In addition to their mechanical roles in anchorage, integrins transmit chemical signals into the cell (outside-in signaling), providing information on its location, local environment, adhesive state, and surrounding matrix” (Harburger, 2009, para.1).

Of Doves, Ravens, and Mud-Diving Minks

Many such deluge myths include various procedures for “sensing the environment.” The technique of avian reconnaissance is different in the story told by Utnapishtim in the famous Gilgamesh epic. He sends out a dove first, then a swallow, then a raven. An early third-century BCE Greek version of earlier Babylonian sources tells of a certain Xisouthrus who, in the Noachic role of a flood survivor, “freed several birds. They found neither food nor a place to rest” (Darshan, 2017, sec. 4). The motif of environment-sensing animals is not restricted to clay tablets from the ancient Near East nor to birds. The Newetee people on the northern tip of Vancouver Island tell of primordial mud-diving minks suited to the purpose of finding a safe landing in their version of the flood myth. The Papago tribe of the American Southwest assign the task to Coyote. Montezuma (Noah’s native American counterpart) says to

his four-legged companion, “[Coyote], there must be other dry spots somewhere. You travel fast on four legs. Go west and do some scouting.” Eventually, Coyote assesses the area to the north as a suitable place to rebuild civilization. Potawatomis recall the poignant account of the muskrat’s attempt to prove that the earth is within reach somewhere beneath this now-receding deluge. The duck and loon had been unable to hold their breath long enough to make the determination. But when the muskrat floats to the surface, he is not breathing. In his lifeless paw, however, is a little clump of mud. The hope of a safe harbor is now a reality.

Noah’s search for dry land and the transport of a blastocyst to implantation in the uterus are, I suggest, reciprocal realities. In the article “Deciphering the Crosstalk of Implantation: Advances and Challenges,” Paria et al. (2002) explain the perils that must be overcome as the ovum—now a blastocyst—sends and receives chemical messages relevant to a safe landing. Their patient research led to the identification of embryonic signals responsible for initiating embryo-uterine interactions, specifically, Hb-EGF, a growth factor found in different cell types, and hCG, a hormone that arises in the trophoblast and elicits numerous responses from the uterine environment. The crosstalk gets more complicated still. Integrins, cell-adhesion molecules found in the endometrium and the blastocyst, have a role, not completely understood, in “conveying information about the extracellular environment to the nucleus and modulating the local immune response” (Wolter, 2013, para. 6).

Diligent researchers have spent whole lifetimes contemplating this delicate, even precarious moment in human reproduction, this chemical negotiation, this exchange of messages, or cell-to-cell signaling which dictates whether the blastocyst will implant or be sloughed away, a human waste product, but not a human being. The recursive dove in Noah’s tale also sends and receives, eventually bringing back the olive branch as proof of dry land. Ark and blastocyst are looking for a soft landing where they can discharge their cargo. Having found his Ararat, Noah “removed the covering of the ark and saw that the surface of the ground was drying up” (Genesis 8:13-14). The blastocyst, similarly, hatches from the zona pellucida “on day six after the LH surge and is subsequently ready for implantation, probably within the nearest 24 hours” (Stavreus-Evers, 2005, p. 23).

Implantation: Act II of the Prenatal Drama

If fertilization concludes the first act of the reproductive drama, the second act, surely, is implantation with its inherent risks, elements of suspense, and occasionally catastrophic outcomes. It is little wonder that this latent theme has been woven into the origin stories of ancient civilizations worldwide. R.D. Laing recognized the latent theme of implantation behind the adoption of Moses by the Pharaoh's daughter and a similar trope in Aqqi (sometimes spelled Akki), the water carrier's retrieval of the pitch-lined basket of Sargon.

It is hard to miss the metaphor in the story of Osiris, sadly adrift in the coffin made to his exact measurements, floating down the Nile and from there to the sea, a uterine journey in broad strokes. In the words of Plutarch,

Thereafter Isis, as they related, learned that the chest had been cast up by the sea near the land of Byblus and that the waves had gently set it down amid a clump of heather. The heather in a short time ran up into a very beautiful and massive stock and enfolded and embraced the chest with its growth and concealed it within its trunk. (Plutarch, p. 41)

The Book of Exodus is told in a way that the hope of a Promised Land becomes the literary equivalent of the journey to the endometrium. It might be worthwhile to rehearse the elements of the second book of the Torah to see how it all falls together.

Figure 1

Book of Exodus and the Journey to the Endometrium

| | |
|--|---|
| March to Sinai. | The sperm race for the egg. |
| Parting of the Red Sea. | Cervix open; admits passage of sperm in advance of the majority. |
| Closing of the Red Sea. Egyptians drowned. | Cervix closed—extermination of competing sperm. |
| Reception of (twin) tablets. | Mother-derived and Father-derived half sets of chromosomes arranged in homologous pairs. |
| Emplacement of tablets in “ark.” | Fertilized ovum sealed against polyspermy (fertilization by more than one sperm) |
| Ark carried by Hebrews toward the promised land. | The morula/blastocyst floating toward implantation. |
| Devastation of Indigenous peoples, including Hittites, Girgashites, Amorites, Canaanites, Perizzites, Hivites, and Jebusites (Deut.7.1-3) | Complete elimination of remaining sperm/male sex cells in their foredoomed quest to reach the already fertilized egg. |
| The “Promised Land.” | The endometrium, where the zygote will either implant successfully or abort. |
| Crossing the Jordan with Priests in advance. “But as soon as the bearers of the Ark reached the Jordan, and the feet of the priests bearing the Ark dipped into the water at its edge, the waters coming down from upstream piled up in a single heap a great way off... while all Israel crossed over on dry land, until the entire nation had finished crossing the Jordan.” (Josh. 3.15). | Implantation in the endometrium. |

Conclusion to Noah’s Journey: Mitosis and Gastrulation

Then God said to Noah,

Go out of the ark, together with your wife and your sons and your sons’ wives. Bring out with you every living thing that is with you—all bodily creatures, be they birds or animals or creeping things of the earth—and let them abound on the earth, breeding and multiplying on it. (*The Jewish Study Bible*, Berlin, 2014, Genesis 8:5-17)

Noah is charged with nothing less than the repopulation of the planet, and again, “God blessed Noah and his sons and said to them, “Be fertile and

multiply and fill the earth” (Genesis 9:1). There is no command more congenial to a fertilized cell. Multiply? Thy will be done! The single cell comprising the zygote undergoes its first cleavage, doubling from one cell to two identical cells. These also double again and again, quickly becoming a *morula*, a solid ball of sixteen cells, then a *blastula* with the ever-multiplying cells segregating into small populations united by some future purpose. The inner cell mass, the ICM, gathers and will give rise to the embryo. Only at gastrulation does the pace of cell division begin to slow as the cells change positions into functionally distinct zones or “three types of tissue: the ectoderm, producing the skin and nervous system; the mesoderm, from which develop connective tissues, the circulatory system, muscles and bones; and the endoderm, which forms the digestive system, lungs, and urinary system.” (Britannica, *Embryo*, para. 3).

Evoking the equivalent of the tri-laminar germ layers of the gastrula, there are three sons of Noah: Shem, Ham, and Japheth, “and from these, the whole world branched out” (Genesis. 9:1-7). I am suggesting that the story of Noah and the story of a single fertilized cell are the same, the point-by-point correlations due to the phenomenon called Mythobiogenesis.

Window on the Womb

In the keynote address to the APPPAH conference, Dr. Thomas Verny asked, “How do we gain knowledge of the unborn child? What sort of windows into the womb can we detect?” I submit that Mythobiogenesis provides a window on the womb, not necessarily in terms of individual psychologies so much as regards the whole *weltanschauung* of civil society, of cultures that are “seen to behave as if all members are bound up together in a shared intra-uterine environment...[which] over time, generates a series of myths, rituals, symbols, beliefs and dynamics which externalize and reify the contents of the common unconscious.” (Wasdell, 1992, p. 9) On another occasion, I would like to pursue Wasdell’s proposal and explore the dynamic relationship of the preborn and the culture into which they will be born, not just in terms of stories but in terms of religious praxis and liturgies, large and small. But for now, it is sufficient if I have, in some measure, demonstrated the strong possibility that inside the cell, which has been called the essential unit of life since the seventeenth century, is a place where proteins and stories come from.

References

- Berlin, A., Brettler, M. Z., & Jewish Publication Society. (2014). *The Jewish Study Bible*. Oxford University Press.
- Bonaduce, J. (2023). Plato: The philosopher as pre-nate. *International Journal of Prenatal & Life Sciences*. <https://doi.org/10.24946/IJPLS/20231205>
- Britannica, T. Editors of Encyclopaedia (2023, March 28). *Ark of the covenant*. *Encyclopedia Britannica*. <https://www.britannica.com/topic/Ark-of-the-Covenant>
- Britannica, T. Editors of Encyclopaedia (2023, June 27). *Embryo*. *Encyclopedia Britannica*. <https://www.britannica.com/science/embryo-human-and-animal>
- Cleveland Clinic. (2022, April 29). *Blastocyst: Definition, stage & implantation*. <https://my.clevelandclinic.org/health/body/22889-blastocyst>
- Darshan, G. (2017, October 17). *The motif of releasing Birds in ANE Flood Stories*. <https://thetorah.com/article/the-motif-of-releasing-birds-in-ane-flood-stories>.
- DeMause, L., Mr. (1981). *Foundations of psychohistory* (1st ed., p. 247). Creative Roots, Inc.
- Genetic Science Learning Center. (2016, March 1) Mitosis, meiosis and fertilization. Retrieved June 15, 2023, from <https://learn.genetics.utah.edu/content/basics/diagnose>
- Harburger, D. S., & Calderwood, D. A. (2009). Integrin signalling at a glance. *Journal of Cell Science*, 122(2), 159-163. <https://doi.org/10.1242/jcs.018093>
- Laing, R. (1976). *The Facts of Life* (1st ed.). Ballantine.
- Moore, K. L., N., P. T. V., & Torchia, M. G. (2020). *The Developing Human: Clinically Oriented Embryology* (11th ed.). Elsevier.
- Paria, B. C., Reese, J., Das, S. K., & Dey, S. K. (2002). Deciphering the cross-talk of implantation: advances and challenges. *Science (New York, N.Y.)*, 296(5576), 2185–2188. <https://doi.org/10.1126/science.1071601>
- Plato. (2008). *Timaeus and Critias* (D. Lee & T.K. Johansen, Trans.; 3rd ed.) Penguin Classics.
- Plutarch. (1936). *Isis and Osiris: Vol. V*. Loeb Classical Library.
- Stavreus-Evers, A. C. (2005) *Characteristics and possible function of pinopodes seen on the receptive human endometrium*. *Middle East Fertility Society Journal*, Characteristics and possible function of pinopodes seen on the receptive human endometrium. *Middle East Fertility Society Journal*, 10(1).
- Wasdell, D. (1992) The Pre- and Perinatal Ground of Religion and War. *Self & Society*, 20(3), 1-12, <https://www.10.1080/03060497.1992.11085264>
- Wolter, J. M., (2013). “The Process of implantation of embryos in primates.” *Embryo Project Encyclopedia*. <http://embryoasu.edu/handle//10776/4935>
- Verny, T. R. (2021). *The Embodied Mind: Understanding the Mysteries of Cellular Memory, Consciousness, and Our Bodies*. Simon and Schuster.