Implantation Journey: The Original Human Myth (Part 3)

Karlton Terry

Abstract: The implantation journey of the blastocyst/embryo is traced throughout its many biologic/embryologic transitions and transmutations. Possible psychological impacts that may arise from early stresses, imprints, and other experiences are discussed. The journeying blastocyst/embryo is sometimes portrayed as a protagonist in the transcript of each human being's personal past. Events confronted and subsequent coping or survival styles during the journey are examined in reference to adult behavior patterns and belief systems. The relationship between Myths (as reflections of the human psyche) and the consequences of a human being's individual implantation journey (as the basis for templates of the human psyche) are explored.

Keywords: Blastocyst, Embryo, Implantation, Imprints, Myth, Behavior Patterns

Uterine Exploration

Once the hatched cells are free from the zona pellucida, this outer skin no longer protects them and the hungry inner cells are directly exposed to the uterine environment for the first time. In order to examine the relative existential circumstances of this situation, let's refer to a biblical parable and ask what it was like for Jonah inside the belly of the whale. If you let your imagination wander, meditate on the question, or allow your own body feelings to communicate with you, a portrait imbued with essentials of your own uterine exploration might arise. What did it smell like?

Karlton Terry is co-founder of the Institute for Pre- and Perinatal Education (IPPE) where he supervises IPPE teachers and teaches advanced pre- and perintal courses. He was a member of the board for the International Society for Pre- and Perinatal Medicine (ISPPM). He has studied pre- and perinatal psychology with Margaret Grant, Graham Farrant, and William Emerson. As senior teacher for Emerson Training Seminars, Karlton co-taught with Emerson in Mexico and Switzerland. Karlton organized pre-and perinatal foundation courses and intermediate courses, teaching separately in Switzerland, Germany, Austria, England, Italy, Belgium, and Portugal. He has developed embodiment courses as well as IPPE baby therapy courses. He is a frequent speaker at international congresses and is author of "The V Stages of the Sperm Journey and V Stages of the Egg Journey."

What was there to eat? Jonah has been portrayed in art, literature and cartoons as: starving, eating rotten fish parts, freezing, sitting by a fire, and even enjoying abundant multiple-course sea meals. Perhaps these various depictions represent the uterine environments (and the consequential early experiences) of different artists and writers as projected onto the biblical character. Very few people remember how he got there or what he did after he got out, but his time in the belly is memorable. In some way, we can all relate to his predicament, and we each probably transfer some of our own experience onto him. This is why his story is so visceral and memorable.

Mythology has many stories of uterine activity and of deities spending time inside the body of others. Kronos, for example, while inside the uterus of his mother, Gaia, lopped off the genitals of his father, Ouranos. Later, as king of the gods, Kronos swallowed each of his children, except Zeus, when they were born. A year after his birth Zeus was fully grown and caused Kronos to vomit up all of his siblings who together with Zeus overthrew the old king. Throughout Classical and primitive mythology human beings experiencing life on earth are portrayed virtually as vulnerable as blastocysts experiencing the uterine wilderness: "… the myths show a world full of evil forces, unpredictable change, difficult conditions...the world portrayed in traditional myths is full of uncertainties and surprises. It is assumed that no mortal can avoid suffering, that any human being is continually at the mercy of forces beyond his or her control" (Lefkowitz, 2003, p. 236-237).

Meanwhile, human beings, subject to uncertainty and the influences of the Olympian gods, pursue their lives on an earth that can be likened to the uterus. "… The earth is… a huge anthropomorphic female named Gaia, mother of gods and humans…she furnished the soil from which the first human beings were fashioned and… she continues to nurture human beings by sending up the plants that sustain them" (Hansen, 2004, p. 26). "Indeed, features of the earth's surface are sometimes spoken of as though they were parts of a female body: caves are wombs, stones are bones, and the center of the earth is a navel, not to mention the terrestrial waters that interconnect and move through the earth like blood in a mammalian body. The earth's surface has the feel of a largely female realm dotted with small places staked out by men for human habitation and worship" (p.

26-27). Individual implantation sites in the uterine wilderness are symbolically described as a background against which much of mythology takes place.

Meanwhile the actual blastocyst, while exploring its uterine world, is actively looking for food and a place to call home. Membranes of its cells, receptor sites on the membranes, and the integral membrane proteins (the gateways through the membranes) are functioning on high alert. Researchers have suggested that the blastocyst has an uncanny ability to orient toward a microenvironment that is richer in possibilities for encountering nutrients, the fertile hunting ground. Then, as if shooting an arrow, the blastocyst pierces the flesh and draws blood into its center so that it can survive. How does the original "hunt" impact our primal human qualities? One is reminded of the Greek goddess Artemis (in Roman mythology: Diana) who takes pleasure in roaming the mountains and forests. She is the goddess of wild creatures and places and she slays wild boar and deer with her bow and arrows. With her brother Apollo (Roman: Apollon) she invented the art of hunting which was then passed on to become the general knowledge of the mortals so that they could sustain themselves and augment their diets. If offended, she can destroy people's herds and prevent their farmlands from being sown. From the point of view of the blastocyst, nutrients must be "hunted" and obtained in high enough amounts and at high enough quality or the journeying creature will suffer or die. Like the journeying heroes of mythology such as Jason and Odysseus, maybe blastocysts, also "learn through suffering and danger" (Lefkowitz, 2003, p. 12).

Cells have intelligence, sensitivity, and are capable of learning, or being programmed. The blastocyst is a community of cells with a collective intention: to survive the transition from feeding on uterine milk through the zona pellucida, to feeding on the blood of the mother. Raw exposure to the surface topography of the uterus will impact the intent, purpose, and searching activities of the individual and collective cells of the hatched blastocyst. The primitive form of the human is able to move away from danger or toxicity and move toward nutrients. This explains why very early in our lives the rewards and pains of our efforts program our primal cells creating "template programs," master patterns of responses and reactions to circumstances and events. If these "programs" reside in the stem cells themselves, the cell

membranes, and the proteins turning our genes off and on, then all of the organs and body parts that derive from these early cells will also possess the information and the template programs. This concept explains the phenomenon of the "whole body feeling," "cellular memory," and maybe even intuition. This concept explains the "knee-jerk response" and certain functions of the amygdala, neurological programming in the brain and other parts of the nervous system. If we have a "gut feeling" about something, or a "pit in our stomachs" or if we're "starving to death," we may be experiencing impressive body feelings and memories derived from early precursors at cellular levels deep within the archives of our personal evolution. Furthermore, we are likely to respond and react to such feelings pursuant to our template program, or conditioned affect.

We have survived our early journeys and transitions because of how we survived. Cells learn and remember such milestones, and a blastocyst is a colony of cells organized around its collective voice. If an event of megalithic proportions relative to the size and viability of the colony is survived, then the organism is convinced of the efficacy of certain behaviors in the face of special stress circumstances. Probably this explains how our earliest cells, the ones that develop into our brains and bodies, might have built-in tendencies, template programs, including convictions of how to best get things accomplished. This could explain why sometimes stubborn behavior patterns in the offspring of these cells (adults and children) are only relinquished after surrender becomes the only option. How often do we see family members or friends or ourselves endlessly repeating unsuccessful patterns even when, from a logical or cognitive perspective, the behaviors prove ineffective? What is it that makes old patterns so hard to change? You can't teach an old dog new tricks because the puppy learned patterns deep in its core, and having survived, hangs on to these patterns with conviction.

The grand theme of journeying, which has prevailed since conception, is about to come to its end. Like a dowser who discovers water, or an energy company drilling for oil that hits a gusher, the blastocyst orients toward a fertile spot in the uterine wilderness. Known by cellular biologists as a nurturing microenvironment, by fertility researchers as the 'privileged site,' by Bedouins as the oasis, this is the Promised Land where the blastocyst will finally settle down.

Implantation and its Sub Stages

Most implantations occur in the endometrium of the fundus (the upper wall, or ceiling of the uterus) near the fallopian tube in which conception occurred. However, implantations can occur anywhere in the uterus. As stated above, cellular biologists and fertility researchers sometimes refer to the vicinity around the location of implantation as the "privileged site." This moniker addresses the curious phenomenon of the viability zone in which the blastocyst is not only able to survive, but is ultimately accepted by the epithelial surface of the endometrium, then invited deeper into the endometrium itself, until finally it moves completely inside the uterine wall. Once inside, the blastocyst develops an interface with the mother. This area, appearing under magnification as a part of the leading edge of the blastocyst is called the syncytiotrophoblast.

Within the syncytiotrophoblast, molecular "fingers" from the trophoblast (trophoblastic tendrils) creep in various directions until a lacunae, or pool of maternal blood from an endometrial vessel is encountered. After a successful union with this source of nourishment, the implantation process is considered to be complete. New processes begin, including chorion formation and the other early stages of placental and umbilical formation.

Beginning at the end of the first week, and lasting only about another week, implantation is quite a short transition, but it is the most difficult to achieve from the biological/developmental perspective since about two-thirds of all conceptions never successfully implant. Fertility and In Vitro Fertilization labs meet this challenge with all kinds of chemical and hormonal augmentations and also sometimes use a laser to slit the zona pellucida of a blastocyst so that it can hatch and implant more easily. These interventions in the biological process, developed to force pregnancy in infertile couples, are referred to as ART, or "Assisted Reproduction Technology."

Considering implantation from the scientific perspective, there are all kinds of unanswered questions and so scientists do not yet know the full story of how implantation is possible. According to immunological theory, the mother's body should recognize the hatched blastocyst as a foreign invader with a genetic makeup different from her own. Therefore the immune

system and defense systems of the mother should organize to destroy the blastocyst, just as these systems organize to confront and destroy a bacterial infection. A splinter in the skin is surrounded by white blood cells that eat away at the invading wood and form a ball of pus around the site of the invasion. The successful human blastocyst however is first allowed to attach to the epithelial surface of the endometrium, and subsequently allowed to enter into the layers of the endometrium and grow. Embryologists have not determined whether these anomalous molecular and chemical processes are initiated by the blastocyst or the endometrium. During this process, which has been observed and photographed microscopically, it can be difficult to determine where the blastocyst ends and where the endometrium begins. "Stalks" or "fingers" develop, looking like stalactites merged with stalagmites, and cell membranes disappear and the nuclei of fetal cells are seen next to the nuclei of maternal cells.

The process of implantation is a miraculous, microcosmic rite of passage, miraculous because it is an extremely outstanding, unusual event and accomplishment. As regards such a phenomenon, the human mind is often compelled to reach for explanations in the realm of divine intervention or acknowledge the event as a special operation subject to or guided by unknown scientific or mysterious laws. That human beings themselves derive from such an event adds to the relevance of the monikers "miracle" and "myth." From the perspective of normal biologic function, implantation shouldn't happen but it routinely does. It abounds throughout all cultures and is responsible for the existence of the individual human being in all its diversity. We all have this special existential phenomenon at our origin.

At the epicenter of the implantation transition is a dance of viability occurring in the context of an intimate negotiation between two organisms. One organism could die if their mutual "conversation" does not end in acceptance. If acceptance is realized, the other organism will be more or less permanently transformed into a "host" or mother. The chemical exchanges and molecular processes operating between the two organisms during this tentative time are aptly referred to in the scientific community as "maternal/embryo cross-talk." The name "cross-talk" describes a situation whereby two different organisms are "communicating" at a chemical level, and through such communication a life or death bargain is agreed and struck.

Maternal/embryonic cross- talk as bilateral communication is something like a chemical negotiation that has relevance at the molecular, cellular, and personal levels. Something peculiar occurs at the implantation site. For unknown reasons, the trophoblast (the "leading" part of the blastocyst, proximal or adhering to the endometrium) does not provoke an attack from the maternal antibodies. Cell walls in the syncytiotrophoblast of the embryo and endometrium have been observed to dissolve so that the cell parts of the trophoblast can be seen next to the nuclei of endometrial cells, although they are in different cytoplasm. When the cell membranes disappear, the nuclei of the trophoblast and endometrium are in a merged but not necessarily mixed cytoplasm. At this stage the rudimentary human being is living in a world completely different than the biological environments at any other time in human life. The implications at all levels—biological, psychological, spiritual, existential—are portent.

Given our current level of scientific understanding one can only wonder what is happening in the mysterious crevices at the cellular and molecular levels in this environment where the membranes of cells have vanished. Is the hungry blastocyst begging for food? It is an elegant dance of the ultimate union? Or is the little being aggressive, demanding? Sneaking, stealing? Biologic organisms have a strong innate drive to live. The impetus of a human being, coming into human form, must be active, vitalized even, during this urgent, vigorous, and life or death stage. It has been observed during human implantation that the embryonic disc has an almost constant orientation toward the food source, the endometrium, and specifically those parts of the endometrium that are more densely laced with lacunae, small pits or cavities filled with blood. Not sprouting from its outer surface, which is dissolving at the cell wall frontier, but from inside the dense part of the trophoblast, finger-like villi develop with the mission of garnering nourishment. The tendrils and the searching parts of the trophoblast have a definite and selective orientation to parts of the endometrium where there are blood vessels. It is as though the hungry blastocyst somehow knows where the "cookie jar" is and orients in that direction. There don't appear to be many stages between the recognition of the blood supply and the vigorous penetration into it, suggesting that once the blood is "discovered" by the trophoblast, a rather quick penetration into it is accomplished, as when a child's straw slips quickly into a

milkshake. It is probable that the endometrial stromal cells transform into decidual cells that will disintegrate and allow penetration by the blastocyst… but how does this happen? No one yet knows, but for now researchers agree that there is "talk" between the mother and "child" (embryo). "The implantation process requires a receptive endometrium, a functionally normal embryo at the blastocyst stage, and a dialogue, or cross-communication, between the maternal and embryonic tissues" (Simon, Dominguez, Remohi, & Pellicer, 2001, p. 1).

Maybe the hunger of the blastocyst is expressed through chemical actions at the cellular membrane level, similar to the function of peptides or "feeling" molecules. Maybe this need is recognized and the maternal response of the most "feminine" organ in the human body thereby activated. "Increasing evidence demonstrates that embryonic regulation induces reciprocal interactions that change throughout the implantation process. During apposition [surface contact between the blastocyst and the endometrium] this dialogue is mediated by soluble proteins produced and received in a bi-directional fashion" (Simon, et al., 2001, p. 1).

"Embryonic regulation" as used here could also mean embryonic initiation. The blastocyst initiates a dialogue. After all it is the blastocyst that is in need. The uterus does not need the blastocyst for any particular reason any more than soil needs a seed… but the blastocyst will die if the uterus does not accept it. Whether or not the uterus is acceptable to the blastocyst, if it wants to survive, the blastocyst will take what is there and make the best of it. In my own case, and in the case of you the reader, our blastocysts had all the potential to become a complete human being. It is tempting here to give a nod to the great debate: when does a human being become a human being? At conception? At implantation? At birth?

At some deep level within the body of a mother-to-be, a microdomain of maternal endometrial cells listens to a special "visitor" long enough to become engaged in the dialogue of acceptance, nurturing, and sustaining a new life: reciprocal interactions that change throughout the implantation process. These reciprocal interactions constitute the most primal biologic interplay, one that lays down the biological, chemical basis, the actual physical structure of what will become an individual human being. It is known that environment affects morphogenetics, so it can be surmised that whatever happens at the earliest stage sets up an

inherent resonance that inhabits and informs the prima materia of the emerging, still unformed, organism. The chemical, biological and psychological field in which we were formed influences everything germinal to becoming human, including the cells that become the brain, organs and bones. One can imagine that the circumstances of implantation will govern some of the physical, emotional and psychological dispositions of the developing baby. The cells that become the adrenals and the brain parts that control hormones, the organs of emotion and the balance of neuropeptide chemistry are all at least prejudiced by early interactions between the hungry cells of the implanting blastocyst and the biochemical soup of the endometrial fluids within the syncytiotrophoblast.

Most mothers, even ones who are trying to get pregnant, have no idea if or when they have conceived, nor if or when implantation has occurred. Mothers are usually not conscious that they are pregnant until the stage of "Discovery." Discovery is a prenatal stage that has been assigned significant biologic and psychological attributes and it occurs when the mother realizes and obtains objective verification that she is pregnant. This stage has been well researched and described by Dr. William Emerson. In most pregnancies discovery occurs approximately four weeks after conception and is usually heralded by an anxious or hopeful time after a missed menstrual cycle. Implantation usually begins about a week after conception and therefore is an event that takes place, in most cases, outside the realm of maternal consciousness, in the fertile darkness of biologic function. Still, the physical and psychological dispositions of the mother-to-be have either harmonic or dissonant influences upon the microenvironment that determines the viability of the implantation site.

It is astonishing, as more is discovered about the complexity and responsiveness of individual cells, how they function as something like miniature human entities, especially in that they are entities possessing memory that informs their daily operations. In regard to all of our basic biologic functions such as respiration, eating, reproduction, we whole humans are seeking positive experiences and avoiding danger and as such we can be seen as expanded fractal expressions of the microcosm. Meanwhile it has become more compelling to respect and appreciate the interactive principle between the macrocosm and the microcosm: what we think, what we eat and what we do affects our individual cells;

and what our individual cells do and how well they do it affects our whole self. Countless transactions, decisions, maintenance functions and other operations that take place daily within a single cell are expressed and symbolized in the day to day actions reflected by grown human beings in their outer lives.

What survival strategies and growth patterns are put in place by the manner and circumstances of our implantation? On a cellular or on a whole person level, if we get hungry, we eat. If we are very hungry, we'll eat whatever is nearby. If we are starving, we'll eat whatever we can, even if it is a bit old or carries something disagreeable within it. What are we willing to swallow if we are starving? On the embryologic level we will swallow whatever is floating around in our mother's blood along with the soluble proteins, gasses (such as O2), sugars, and other nutrients we need for our developing bodies. Many elements are floating around in our mother's blood, perhaps thousands of neuropeptides, for example, that express her emotional frame of being, her attitudes about life, her sexuality, and her sense of motherhood.

As prenates we swallow through our umbilical cords, but we contract our bellies if our mother has eaten something too spicy or if she had a bad morning because of a vigorous quarrel and "spicy" neuropeptides are flowing in her blood. As newborns we swallow mother's milk, but if she has eaten something tainted, if she is suffering an intense bout of flu or even self-loathing we might reject the milk or spit it up because of its undesirable subcontents. As social and biological organisms, and not just on the symbolic level, children have swallowed their parents' less than optimal diets, scornful biases, unethical prejudices, and other dysfunctions in order to be fed and feel safe. Whole cultures and nations have swallowed preposterous politics and outrageous abominations in order to be safe members of the society: fed, nurtured and empowered—even if it means participating in genocide of other human beings. What are we willing to swallow if we suffer as the starving blastocyst has suffered? What agreements and contracts did we make when we implanted and how do those play out in our adult lives?

Besides the contents contained within our first drops of nutrition at implantation, the nature of how we implanted is worthy of consideration. Our original implantation style likely expresses itself today in relationship to metaphoric parallels such as our interactions in connection with consuming food, engaging in

intimacy and obtaining money. These are all the basic needs we humans require in order to go on in our lives, similar in significance to the original needs of our own blastocyst. The style or manner in which we obtained our first food at implantation orchestrates the paradigm for future relationships.

Surely there are implantations into lush uterine environments where wanted babies of the right gender are coming at exactly the right time after conscious conceptions. Such an implantation could be mutually blissful. In other scenarios though, the blastocyst as a colony of cells desiring to survive could be experiencing challenges if not desperation. It is striving to eat and survive by engaging in methods never before attempted. Survival desperation is not only a state of being experienced by humans. We see desperate behavior in the animal kingdom as when the grizzly bear eats her own cubs to survive the scarcities of a drought. Is the starving blastocyst in its dialogue and negotiations with the endometrium begging for food or fighting for food? Is it possible that the kernel human could be both vulnerable and aggressive?

By projecting upon the blastocyst our own mature anthropomorphic attributes and interpretations in an attempt to better understand ourselves, are we glorifying a banal biologic function or can we acquire clues to the puzzles of human origins, human relevance, specific individual patterns enacted over and over again by adults? Can we imagine, meditate upon, or even have some strange form of memory about how our own implantation happened? Can we ask our mothers if they were ready to conceive, what their diets were, if they wanted a girl or a boy, if they had miscarriages, if they were really happy in their marriage? If so, we might learn more about our implantation environment and discover the origins of some of our own patterns, functional and dysfunctional. If we examine the cellular drives and the ensuing chemical operations, we can translate the primal interactions into equations or portraits of some of our most basic human behaviors. After all, implantation is one of the most formative realms in which we human beings originate.

Assume that through its inherent intelligence the blastocyst organizes a plan based upon what it encounters, and the uterine environment influences the implantation strategies that develop at the trophoblastocysctic edges. Maybe this is what scientists are observing when they describe "reciprocal interactions that change." Is the blastocyst willing or able to sneak or steal or

barter or bargain? Is it able to merge, dance, embrace? I postulate that whatever particular molecular strategy succeeds will then permeate into the future of the organism: its cells, its organs, and its functional biologic and even psychological tendencies. The successful implantation mode, a template-generating event horizon, results in a self-generating continuum. Beginning with the multiplication and amplification of the successful molecular processes, the ability of the organism to continue to thrive and perform is encouraged or discouraged based upon previous successes. New challenges might first be met with old strategies. Certain biological processes (like certain muscles) are developed over others because of repetitive engagements or movements, as in the big strong arm of a tennis player. Based upon previous successes, innate or instinctual tendencies develop to engage in certain biologic styles and behaviors over others in order to accomplish survival and growth tasks. I call this "template programming" because the successful survival strategies create templates beginning at a cellular level and might eventually reside in the neurological programs in our brains, resulting in behavior patterns. These behaviors are consequences of rudimentary conditioning and reflect emotional and psychological tendencies. At an early organismic level of function, (contrasted with the intelligent or conscious functions we experience with our developed brain) we may develop the perception that we must accept the unacceptable in order to get by. If our mother smoked we had to swallow nicotine and tar in order to get oxygen.

If we sneak or steal our first food are we more inclined later in life to sneak or steal our first dollar? If we barter or bargain as a blastocyst will we be more inclined to barter or bargain in order to get romance or sex? Do we eat voraciously and carelessly as if out of desperation, or are we picky and careful so as to avoid a toxic particle that might "break the camel's back" for a wobbly blastocyst already too full of toxins? Do we invite and expect union? Is intimacy nourishing? Maybe the implanting blastocyst is nothing more than a differentiating mass of primal cells that will consume anything it can, but we know that cell colonies develop a collective consciousness. It is a curious debate as to whether or not there is anything like a soul affiliated with this process and whether or not cellular memory is being laid down. In any case, the little organism is extremely busy during this phase of its life, and template programming is a consequence of its activities.

Embryologists generally agree that implantation begins about a week after conception, and that it takes about another week for implantation to be complete. The syncytiotrophoblast organizes as the leading aspect of the blastocyst. As we know, it is a mass containing areas with multiple nuclei and no individual cell walls: the "blob." It contacts and invades the endometrium, then erodes and dissolves the connective tissues that organize the continuity of the endometrium. The dissolution occurs within the proteins of endometrial stromal (cell formations creating structure and form). The byproducts of the breakdown of the stroma and deciduating (dissolving/melting) cells in the area of the syncytiotrophoblast are a rich source of nutrition that is engulfed by the syncytiotrophoblast. Some observers say that the blastocyst "eats" its way into the endometrium. Others, observing the same event, say it is sucked in and sustained.

Surviving blastocysts are able to produce human chorionic gonadotropin (hCG) in the mass of their syncytiotrophoblast. If this hormone is produced in quantities sufficient to enter the maternal bloodstream, it serves to maintain the endocrine activity of the corpus luteum. The corpus luteum is a body of yellow-colored cells that have formed around the stigma of the ovary where the egg ovulated, and these cells become an endocrine gland. So the surviving blastocyst is communicating with the organ that used to be the home of its egg cell. The signals from the blastocyst are received at the exact location on the organ from which the egg departed its "former home." The hCG is something like a letter from a foreign land, sent back home, as if to say, "I'm still here, keep sending support." Care packages in the form of estrogen and progesterone are generated by the corpus luteum, and sent via the blood stream to maintain and stabilize the nurturing uterine environment allowing the pregnancy to continue. The uterus is thereby maintained in a receptive mode and becomes a more secure "home" for the blastocyst.

Meanwhile, cellular differentiation begins to occur in the central part of the blastocyst. The cytotrophoblast is well in place. What the zona pellucida was to the egg, the cytotrophoblast is to the blastocyst: a peripheral or skin-like organ, the outer part of the organism. Within the cytotrophoblast there is vigorous activity: the amniotic cavity develops; the embryonic disc is constructed; and the primary yolk sac is formed.

The syncytiotrophoblast though, overlying the cytotrophoblast, is still perhaps one of the busiest parts of the blastocyst. Yet it is not just an organ of the blastocyst. It is also a biological result or consequence of its function: something like a chunky soup, or a sloppy field of battle where the organization of the endometrial cells are broken down, dissolved and absorbed. Lacunae in the syncytiotrophoblast fill with maternal blood, bringing oxygen and nutrients that are absorbed by a rudimentary system of the blastocyst that will soon develop into the placenta. Both arterial and venous vessels from the mother's blood system are within (or in contact with) the syncytiotrophoblast, so oxygenated and nutrient-rich blood can flow in and deoxygenated or toxified blood can be collected and taken away.

At ten days after conception the blastocyst is fully embedded in the endometrium, except for a portal remaining at the original invasion, or merger, site. Staying open for two or three more days, this little window is the last biological bridge exposed to the blastocyst's past: the long path journeyed and the many transitions traversed. Finally a fibrous coagulum of blood called the "closing plug" covers up the implanted blastocyst, and it is completely engulfed by the endometrium. If there has been a soul participating in the journey of embodiment and body formation, once the closing plug is in place, yet another significant transition has been traversed: there is no going back. At this stage of life the new human being becomes more and more likely to survive to its birth. Only a few steps remain for the placenta and umbilical cord to begin to take shape, the mesoderm develops and constellates into well-functioning organs, securing the source of nutrients for the remaining eight and 1/2 months of pregnancy.

Conclusion

Certainly, at implantation we may swallow the positive things of life too: love and joy, health and happiness. However, these diets do not wound us so they do not contribute to personal or cultural pathologies. When healthy organisms, economies, and cultures get plenty of what they need there is no such thing as "too much of a good thing" because balance, wholeness and strength are appreciated without the urgency or need that provokes overindulgence or greed.

Except for a few, such as Midas, we don't have myths exploring the problem of too much good turning bad. Most myths concern an injustice that needs correcting, or a problem that must be solved, or a difficult task that demands undertaking with the consequence that a lesson is learned. I think Midas suffers from a template program of core starvation as a blastocyst. Even though he already has more than enough, he is voracious for more. Midas teaches us that unresolved template programs and the unconscious pattern of behavior arising out of them could be fatal.

The myth of Psyche (soul) and Eros (Roman: Amor or Cupid) can be viewed as the story of a reluctant embodying soul who finds it difficult to be here on earth. Like Humpty Dumpty she falls, or tries to fall of a cliff and then a tower, but she is rescued and encouraged to go on by benevolent aspects of her world. She twice throws herself into a river (the fallopian tube) only to find herself washed ashore (the uterus). She has to sort through an enormous pile of tiny grains like an individual cell that must analyze thousands of stimulants from its microenvironment. This task is accomplished with the assistance of ants, just as tiny worker proteins and cellular machines assist cells. Like a hatched blastocyst that must figure out how to get blood from the wall of the uterus, she has to access water from the sheer wall of a rocky cliff. Finally she makes a mistake because of her "reckless curiosity" (hunger) and opens up to something (an ointment belonging to Persephone) that makes her pass out and almost die, but she is rescued by Eros (love) and finds a place among the gods, becoming immoral. This is the story of a soul incarnating, embodying, and thriving.

Most heroes, like Odysseus (Roman: Ulysses), learn through suffering and danger. Perhaps we always need pain and suffering in our lives to help keep us growing, for whenever we approach the glory state of Camelot, rumors of a malevolent dragon are surely nearby. Gluttony and avarice exist as reactions to lack and need, not in reaction to good and plenty. But if the experience of lack and need arises from a template program constellated in early times, lack and need may seem like reality in times of good and plenty. An example of this is seen in the generation of Americans who survived the Great Depression and although most of them are living in relative abundance, many behave as if the depression is still a threat.

Fetal biochemistry transforms into myth only if there is a soul present to experience it or a consciousness present to imagine it. The biochemistry of implantation is unique compared to other cellular experiences. At the edges of the cellular membrane a kind of chaos prevails with cellular priorities and directives shifting from nanosecond to nanosecond. We have learned that membranes themselves breakdown and cytoplasm is mixed. The situation can be visualized as chaos full of portent, like the canvas of an abstract expressionist action painter.

When we make decisions and act out from the contracted confines of pain or in the haste of desperation, we lose our objectivity and our clear sense of what is in harmony. By harmony I mean that which vibrates expands and flows to the natural rhythm of the universe. Harmony means what is best for us as individuals within our sphere of influence as well as within the bigger picture. Universal laws govern us in relationship to the material world, the earth, our communities and our personal relationships—the outer world. Evolving as individuals we recognize that personal harmony is subject to states of balance and order within our minds, our bodies, our feelings, and our psyches—the inner world. When states of harmony are compromised or broken, our life tilts out of balance and the gates guarding against chaos and distraction crumble.

The gods of myth, despite their anthropomorphic jealousies and rivalries, ultimately manage to take actions resulting in justice and harmony. Their individual natures are expressed until excess is reached. Discord is then corrected by other gods, and harmony returns. This function of balance and justice is not always clear to mortals living brief lifetimes of uncertainty and vulnerability. Unlike us, the gods (or archetypes) never age. They live on forever, oiling the wheels of the universe and changing the gears when necessary. Healthy individual genes and cells, like the gods, function within the natural laws of the universe. Individual cells and colonies of cells undertake tasks as and when necessary and generally work logically and in harmony, even when challenges and crises occur.

After we are conceived we are a one-celled organism, then we become a two-celled organism. Like all healthy cells, these are busy functioning according to chemical, molecular, and biologic laws. Chemical and molecular and most biologic reactions and interactions are like mathematical equations in that they are

predictable and consistent (like the gods). But unlike other established cells, blastocyst (or stem) cells have the magical ability to morph and change. This is precisely where the equation becomes less stable, the individual more vulnerable to the environment, the outcomes more unpredictable. In embryology, body parts in a more critical stage of development are more vulnerable than established body parts or dormant body parts. An individual human is forming out of these basic cells, and these individuals are not as subject to rigid equations. In fact eventually they develop free will. This free will tends to get us humans into all kinds of stimulating situations that we must sort out and learn from. Many of our problems arise from choosing incorrectly out of our free will, or from our unconscious reliance on a template program. Sometimes we consciously, unconsciously, or semi-consciously select actions or behaviors from amongst our repertoire that aren't always the ideal choice. These selections, behaviors and their consequences bring pleasure or pain, and in order to change the ones that bring us pain we must grow and change at a core level, underneath our programmed patterns and knee-jerk responses.

Despite the urgency of our day-to-day lives, or of our implantations, we mortals seem to be reminded over and over again of the value and virtue of patience, trust in biologic design, and trust in the so-called cosmic plan. There is always the potential for balance and wholeness, and everything we need to thrive. Often it is present within our immediate grasp, if only we can develop the consciousness and wisdom to recognize it.

A healthy organism is satiated when it is satiated, and individual cells which seem to possess inherent consciousness and wisdom simply seek balance, undertaking actions only when necessary and within the appropriate timing. The same is true for conscious and wise individuals and cultures. A lot could be learned if we could understand and emulate a normal healthy cell. We could learn a lot if, like Odysseus, we could listen for the words of Zeus and Athena. We can also learn to identify our own unhealthy patterns that have been maintained by template programming and evolve out of behavior patterns when they are not in our best interest.

References

Hansen, W. (2004). *Classical mythology: A guide to the mythical world of the Greeks and Romans*. Oxford, NY: Oxford University Press.

Lefkowitz, M. (2003). *Greek gods, human lives*. New Haven, CT and London, Yale University.

Simon, C., Dominguez, F., Remohi, J., & Pellicer, A. (2001). Embryonic effects in human implantation: Embryonic regulation of endometrial molecules in human implantation. *Annals of New York Academy of Sciences, Vol. 943*, 1-16.