Human Conception: How to Overcome Reproduction?

A phenomenological approach to human fertilization

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In the very moment
that we became the Other
– JvdW

Abstract

The phenomena of human conception as revealed during the last decades of research are reframed by a phenomenological approach (so-called dynamic morphology). Viewed and considered in this way, human conception appears not to be an act of reproduction. In the human process of fertilization a process of "de-biologicalization" occurs which leaves room for an act of incarnation in which spiritual energy may be able to bind to or manifest itself by means of physical (biological) substance. The consequences of this view with respect to the definition and quality of artificial conception are briefly discussed.

Introduction: The approach of dynamic morphology

The approach of *dynamic morphology* is rooted in the scientific tradition of phenomenology, in particular the Goethean phenomenological approach to living nature. Like the phenomenologist, the dynamic morphologist is interested in the perception of the language of shapes and forms of living organisms rather than in explaining those forms in terms of causes. He describes the form of an organism in its appearance in order to perceive the dynamics of the underlying formative gesture. Dynamic morphology may be applied not only to the appearance of living organisms as a whole, but also to the dynamics and gestures of the shape of organs and parts of the body within the framework of an organism. Often the morpho-dynamic gesture of a biological shape can be recognized by the formative shaping gesture of the embryonic development and/or by the way the definitive form of an organ or part of a body is achieved in the adult organism. But such knowledge is not absolutely prerequisite for understanding the gesture that speaks through or is expressed by a form or shape.

The gesture that speaks through a form may be recognized by restating the underlying motion that is being expressed in the form by getting a sense of the movement instinctually, so to speak. In this way the gesture of form can be recognized as an internal motion or gesture, which means it is psychologically perceptible and imitable (capable of being imitated). This does not mean that the recognition of the morpho-dynamics of a given form has to be considered as a subjective action in the sense of being related to a personal and individual imagination that cannot be transmitted in an objective way. An example might help elucidate this. The containing character of the skull—by which it protects and shields a given content from the outer environment—can be recognized and accepted by everybody. The gesture of the form is evident in this case. The related mental act of recognizing this gesture may have aspects of an emotion rather than of a rational, objective fact, but this does not mean it is only subjective and therefore nonscientific.

Taken together it might be stated that dynamic morphology does not apply an analytic and anatomical process to describe shapes and forms. Instead, it tries to understand the gesture (*Gestalt*) that is being expressed by and through the form or shape in a more integrated and holistic way. Goethe himself referred to the perception and awareness of a so-called transcendental or supersensible (*sinnlich-*

übersinnliche) quality of the form. By this expression he meant that the gesture or forming language of a shape or form couldn't be placed in the Cartesian category of a sensorial perceptible entity (*res extensa*).

Since shape and form (i.e., gesture and dynamics) are recognizable at every level of nature and living organisms, the dynamic morphologist may perceive a similar or homologous gesture of form at the level of an organism as well as at the level of an organ, a tissue, or a cell. He may also recognize the gesture of a certain plant process in the way a given animal organ is *gesturing*. Goethe, for example, studied the basic morphic principle of *ballen und spreizen* (concentrating and diverging) in plants, but this gesture is also recognizable in mammalian embryonic processes. Considered as such, dynamic morphology constitutes a trans-disciplinary approach.

In this essay human conception will be described by means of a dynamic morphological approach. The aim here is to understand the essence of human conception in terms of motion and gesture. It will be shown that such an approach generates completely different ideas of what essentially is taking place during human conception, compared to the view resulting from a mechanically-oriented description of morphological and biological events.

To start with: The dynamics of the human egg cell

The human egg cell (see figure 1) exhibits a number of features and properties that are basic to nearly every cell in the human body. The egg cell, however, is unique in the fact that it exhibits those basic and common properties in such a pure and fundamental way, nearly as an *archetype*.[1] The almost perfectly spherical shape of the egg cell is an example of this unique and basic property. No other cell in the human body exhibits the (mathematically absolute) spherical shape as perfectly as the egg cell. Normally body cells exhibit all kinds of shapes. This

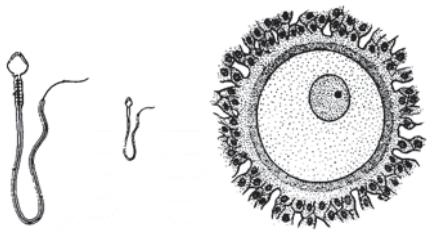

Figure 1. *A sperm cell and an unfertilized egg cell (right). In the center a sperm cell on the same scale as the depicted egg cell.*

phenomenon might be understood or explained by the fact that cells have certain functions that require certain shapes, but mostly it is due to their relations with other (neighboring) cells. In this respect, there exist cubic and cylindrical cells that form a limiting layer (epithelium), like cobblestones paving a road surface. Notice how neurons (nerve cells) have an enormous number of long extensions (axons and dendrites) to make functional networks via synapses with other neurons. Therefore it might be stated that the spherical shape of the egg cell is related to its **solitary** existence. The egg cell exists, so to speak, on its own; it is alone (all-one). The ovary is not made up of egg cell tissue or built up by egg cells. The tissue of the ovary has special cavities (follicles) in which the egg cells are stored separately and in solitude.

A spherical shape combines minimum of contact with the outside environment with maximum of volume and content. That is why a ball can be so easily rolled or moved. The spherical shape of the egg cell represents the quality of a world on its own. The egg cell has relatively a lot of inner space (content): Of all the cells in the human body, it has the largest volume. With a diameter of about 150 to 200 micrometers, it is very large compared to the average cell diameter of about 10 micrometers.[2] The ripened egg cell—as big as a grain of sand—is visible to the naked eye, an extraordinary feature for a cell. For the dynamic morphologist it is important to realize that the egg cell is not only large in the sense of quantity and measurement

but that it also exhibits the gesture of **being-large**. A characteristic of an egg cell is its potential to swell and enlarge its volume immensely during the ripening process: from 10 micrometers as a beginning (primordial) gamete to 45 micrometers at the end of the first phase of ripening and development until it reaches a diameter of more than 150 micrometers by the end of this ripening process. In other words, as it ripens the egg cell gathers a relatively large amount of cytoplasm, resulting in a relatively high ratio of nucleus to cytoplasm. This fact represents the gesture of being-large.

The next distinguishing characteristic of an egg cell is its **openness**, i.e., the egg cell intensively interacts and communicates with its environment. Right after fertilization the egg cell produces substances that affect its immediate environment (i.e., the mucous lining of the ovarian tube). This openness is demonstrated by the fact that the cell is very sensitive to noxious influences arising from its environment. It is a vulnerable cell, so to speak. Being open, being vulnerable may be recognized easily as an internal gesture and motion. One may feel and resonate with the gesture of an organism, which, on the one hand, is open in its interactive relationship with the environment while, on the other, remaining relatively vulnerable to influences and signals from that environment.

The other way round: Comparing and contrasting as a method

A traditional analytical and anatomical approach to a biological organism is to divide it into organs and body parts in order to describe them in more detail at the level of tissues and cells. By contrast, the approach of dynamic morphology always considers the shape or form of the organism in relationship to its environment (context), just as it studies the shape or form of an organ in the context of the whole organism, and so forth. In this respect, approaching an organism through a process of *contrasting* is important. Within the whole of the organism we look for polar tendencies regarding form, for example the skull in contrast to the limbs or extremities. Contrasting is a kind of intensified *comparison*. As noted above, comparison reveals features that escape the observer who applies only the anatomical and analytical approach, which by nature is reductionist and isolating. Taken out of context, certain features of an organism that may escape the observer's eye can more easily be discerned by a morpho-dynamic approach.

The approach of dynamic morphology always considers the shape or form of the organism in relationship to its environment.

In any description of the egg cell involving contrasts, it is helpful to take its context into account in order to become more deeply and essentially acquainted with the gesture of this cell. In the process and dynamics of conception, of course, the sperm cell is the right candidate for that! One can understand the morpho-dynamic characteristics of the egg cell by comparing it and contrasting it with the sperm cells, and vice versa.

The one to be met: Morpho-dynamics of human sperm cells

In the case of sperm cells, there is a tendency to use the plural when referring to them. This is based upon a particular feature of the human sperm cell: Unlike the solitary egg cell, a sperm is never on its own. The production of sperm cells in the human testis is characterized by the production of enormous numbers of cells. By contrast, the process of oogenesis (i.e., the process of ripening and production of egg cells) is characterized by a tendency of diminishing and reduction in number. During the fetal phase of a female, millions of egg cells are produced by means of cell division. But by the time of the female baby's birth, this number is reduced to about two million cells, and to only some several hundred thousand by the time the menstrual

cycle (menarche) begins. In a typical cycle, some ten to twenty egg cells may reach the final stage of ripening, but only one of them (very seldom two or three) is released (ovulation). The rest of the ripened cells disintegrate. In other words, the whole process of egg cell production and ripening may be described as a *converging* tendency (gesture). By contrast, the male process (spermatogenesis) exhibits a *diverging* tendency: Continuously enormous numbers of sperm cells are produced within the testis—millions per day, thousands per second! These huge numbers are also functional. Very many sperm cells will be sacrificed in the process of overcoming the anatomical, physiological, and biochemical barriers that a sperm has to face in order to finally make contact with an egg cell. The production of egg cells from the ovary is a process of titration (one by one), whereas the production of sperm cells in a testis is massive and explosive. These differences illustrate the polar opposite gestures of *one* and *solitude* in the egg cell versus *many* and *community* among the sperm cells.

As to their shape, the contrast between the two gametes is very striking (see figure 1). The egg cell has already been described as being purely spherical. On the contrary the sperm cell—with its total length of about 60 micrometers including the diameter of the head (about 3 to 4 micrometers at the most) and diameter of the so-called tail of no more than 1 micrometer—can be characterized as being a radial-shaped cell. In the sense of morpho-dynamics, the polarity here is clearly evident. The egg cell is a ball. Isn't the ball a form with (endlessly) many **non-visible** radii? The sperm cell, by contrast, brings the principle of radius **to appearance**. Later on, prior to and during conception, many sperm cells will converge and focus on just one egg cell. Don't they bring in this way transcendentally (*sinnlich-übersinnlich*) a ball shape to appearance, with the sperm cells as visible rays of the sensorially perceivable manifestation of that ball? The sperm cells are making visible what is present in a non-visible way within the egg cell (see figure 2)!

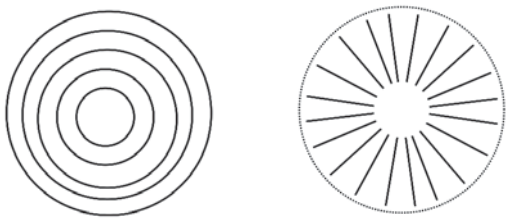

Figure 2. *Circumferences and rays: the two polar principles of the circle. On the left the morphological "egg cell principle," on the right the morphological "sperm cell principle"*

Describing the egg cell, it has already been stated that the spherical shape represents the spatial form with the least possible environmental contact. It therefore represents par excellence the shape that lends itself to being brought into motion (being moved). On the other hand, the radius-like shape represents the principle of motion and (self) mobility. The fact that the sperm cell is an **actively** moving organism (in opposition to an egg cell) is not actually surprising or unexpected for the dynamic morphological observer. It is precisely the flow of fluid within the ovarian tube—by which the egg cell is transported passively in the direction of the uterus—that provides the sperm cell the resisting stream it needs to exercise its potency to move. At the same time the flow of fluid directs and guides its movement.

The sperm cell is a very small cell (as shown in figure 1). As in the case of the egg cell, it is not the quantitative features that constitute the actual convincing argument for the dynamic morphologist to describe the sperm cell as small. The volume of a sperm cell indeed is very small: some 60,000 of them fit into a mature egg cell! By the end of spermatogenesis nearly all of its cytoplasmatic content has been eliminated. This process therefore results in a cell with a cell membrane, a very small amount of cytoplasm, and mostly a nucleus as its cellular content. In other words, the dynamics of a ripening egg cell may be characterized as enlargement, swelling,

and diverging, whereas the formation of a sperm cell embodies the gesture of concentration and diminishing (losing volume). As in the case of the egg cell and its *being-large*, the signature of the sperm cell's *being-small* represents not merely a quantitative but also a qualitative characteristic, and therefore constitutes a morpho-dynamic gesture.

In this respect, what can be said about the relationship and interaction of the sperm cell and its environment? As one might expect, a remarkable polarity may once again be discerned. The egg cell actively and metabolically relates to its physiological context; the sperm cell on the contrary does not exhibit any metabolic exchanges or interaction with its environment. If the egg cell is described as *open* and *vulnerable*, the complete opposite can be said of the sperm cell. Apparently without any difficulty the sperm cell can survive all manner of mechanical and physical manipulations—for example, being centrifuged or frozen to more than 60° Celsius below zero—without any evident or notable damage. In terms of a morpho-dynamic gesture, the sperm cell may be characterized as a *closed* or *non-open* cell.

What is visibility? The question of contrast and/or polarity

By this juncture it may have become evident that there exists a contrast between the two gametes. But what actually is the nature of this contrast in terms of dynamic morphology? Are we dealing with a contrast or opposition or with a polarity? This will be made clear by means of the feature (gesture) of mobility that opens the perspective for a very special relationship between the two cells. Looking at it from the outside, at the level of extra-cellular mobility, the sperm cell may be described as *active* and *mobile*. The egg cell, by contrast, can be characterized as *passive*. When, however, the level of comparison is directed to the *intra*-cellular level—looking at it from the inside, so to speak—then the egg cell represents the *active* cell. This is in line with its characteristic as a metabolically active cell interacting with its extra-cellular environment. The cytoplasm of the egg cell can be described as relatively mobile, in stark contrast to the intra-cellular inactivity of a sperm cell!

More than 90% of the content of a sperm cell is nucleus or DNA-substance. Moreover, the DNA in the sperm cell is structured—almost crystallized, one might say—by a process of strong dehydration. Within the sperm cell, pure form and structure dominate, whereas within the egg cell the activity of the cytoplasm is present. From the dynamic morphological view, something different is arising than simply an opposition: In gesture and behavior the cells are a polarity to each other. Essential features of a polarity are reversibility and inversion: in this case, external mobility with internal structure (of the sperm cell) versus external rest with internal activity (of the egg cell).

The polar character of the two human gametes can also be discerned by studying their behavior during cell division and ripening. In bisexual reproduction the egg cell undergoes two reduction divisions (*meioses*) in order to reduce the number of chromosomes to half the normal (i.e., diploid) number.[1] Generally as a result of cell division, two so-called sister cells are formed, both about as large as the so-called mother cell from which they were derived. This is not at all the case resulting in the meiosis of the egg cell. In meiosis, the egg cell divides into one big voluminous "sister cell" (the actual *oocyte*) and an unusually small cell (the so-called *polar body*). The latter contains only the necessary half of the chromosomal substance and plays no significant role in the process of conception

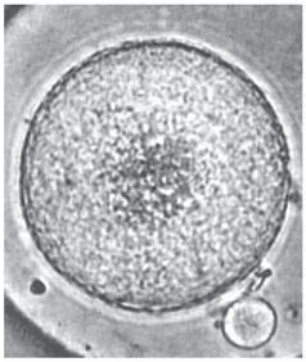

Figure 3. *Egg cell (oocyte I) with a polar body just before conception*

in humans as far as is known (see figure 3). From a dynamic morphological viewpoint this *behavior* perfectly suits the dynamics of *conservation of volume and content* (being-large), which has been described as one of the most significant characteristics of the egg cell. By contrast, the morpho-dynamic characteristics for spermatogenesis are *fragmentation* (being-many), division and reduction of volume (being-small). In such a context cell division seems a suitable gesture. Indeed, sperm cells do not resist the reduction divisions occurring during the production process. The two spermatocytes resulting from their meiosis are both equal in size. As noted earlier, the sperm cell strives for reduction in volume and for concentration. In the final stage of ripening from spermatocyte to the actual sperm cell (*spermatozoon*), it is biologically necessary that the sperm cell rid itself of superfluous cytoplasm. This process is completely in line with the signature and gesture of being-small.

In each case the sperm cell and egg cell express the principle of polarity.

As a rule, pathological phenomena confirm the essential characteristics of a normal, non-pathological process.[3] In the ejaculated sperm of a healthy man, a large percentage of the sperm cells are malformed because attached to their necks is a relatively large sack of cytoplasm that greatly reduces the mobility of the cell. A sperm cell obviously will be handicapped if it preserves its cytoplasm, whereas for the egg cell this preservation of cytoplasm is a must, since it is a necessary condition for the proper functioning of the egg cell.

In this respect, the polar body of the egg cell (after the first meiosis) may be considered as a kind of strangulated sperm cell and the sack of cytoplasm of a malformed sperm cell as a kind of egg cell that should have been sequestrated in the normal ripening process. The egg cell seems to preserve its signature by expelling or banishing the sperm cell principle. By the same token, the sperm cell reaches its proper being, functioning, and character by a completely opposite morpho-dynamic process.

The dynamic morphological description of both gametes is not exhausted by the phenomena described thus far; many more characteristics of these two cells could be described. In each case the sperm cell and egg cell express the principle of polarity: In a given complex of features or gestures, the one cell is the complete *reverse and inversion* of the other one.

Periphery and center: Cytoplasm versus nucleus

Dynamic morphology searches for gestures of form, or gestural behavior. It may be obvious that the description provided here leads from the level of sensorial and observable, opposite and polar phenomena to the level of supersensory (*sinnlich-übersinnliche*) morpho-dynamics. Figure 1 can be characterized as being still an anatomical figure of the two gametes, while Figure 2 is an attempt to visualize the morpho-dynamics of sperm cell versus egg cell. However, it is only by means of dynamic morphology that one can see the oocyte in Figure 3 as *egg cellular* and the related polar body as *sperm cellular*. What could be the comprehensive characterization of both form gestures? One could make a long list of pairs of polar notions that characterize an egg cell respective to a sperm cell. For example: big/small, open/closed, active/passive, process/form, diverging/concentrating. One has to take into account that in these pairs of characteristics, each may be turned around and reversed, depending on the level at which the observation is directed.

Consider what has been said about external mobility versus internal mobility. All of these polar and opposite aspects are also aspects of so-called egg cellularity and sperm cellularity. The essential egg cell gesture and sperm cell gesture may be considered as being *the sum* of

all those aspects and gestures. But it also extends beyond them. For the next part of this essay, which will draw attention to the actual process of fertilization and conception, it is important to recognize the following comprehensive gestures as bio-dynamic. The egg cell and its gesture can be comprehensively characterized as *cytoplasm* and that of the sperm cell as *nucleus*. Features of the egg cell—such as openness, internal mobility, the pursuit of cell volume, and the interactivity with the environment—can all be comprehensively expressed and summarized as the *gesture of cytoplasm* or *cytoplasmicity*. As for the sperm cell, the gestures of concentration, the tendency to structuralize, to form closed spaces, and so on can be described or summarized as the *gesture of nucleus* or *nuclearity*.

Once both gametes were similar in gestures and morpho-dynamics. At the beginning of embryonic development, both cells were similar in shape and characteristics as so-called *primordial gametes*. Next, both cell types differentiated in opposite and polar directions and specialized (i.e., became one-sided), one as a cell with a cytoplasmic signature and one with a nuclear signature. It is obvious that these dynamic morphological descriptions are at odds with contemporary analytical and anatomical description. In the latter view both gametes are quite normal cells, each constituted of nucleus, cytoplasm, and cell membrane.

Maybe these elements of the cell are in different and various relationships, but each is unmistakably a variant of a normal cell. The polarity principle as described and suggested here can be seen and conceptualized only through a morpho-dynamic view. For the dynamic morphologist, therefore, the egg cell is to be characterized in its gestures and morpho-dynamics as a *sphere of cytoplasm* or *cytoplasmic body* and the sperm cell as a *nucleus* or *nuclear head*. The next section of this article deals with the phenomena of fertilization and conception as well as the gesture and morpho-dynamics of the interaction between these cells at the moment of conception.

Mating dance: The pre-conception attraction complex

In humans, fertilization takes place in the ovarian (Fallopian) tube. Under normal conditions the egg cell arrives in the first (*proximal*) part of the tube directly from the ovary. In the meantime the sperm cells have completed a long journey via the opposite end of the tube, having been deposited in the female vagina and having swum all the way from the vagina via the uterus to the ovarian tube. Millions of them (more than 90% of the number present in the male ejaculate) have passed away or have lost their efficacy due to all manner of biological barriers encountered along the way (e.g., the sperm-hostile properties of the cervical mucus). Nevertheless, there exists a reasonable chance that both gametes will meet.

The same fluid stream (produced by the activity of hair cells in the tubal mucous membrane) by which the egg cell is transported in the direction of the uterus—slowly rolling along the numerous folds and niches of the tuba mucous membrane—provides for the sperm cells a kind of directive stream of resistance against which they exhibit their swimming behavior. Also the relatively large volume of the egg cell increases the opportunity for both cells to meet. Moreover, there exists a kind of chemo-taxis (i.e., a bio-chemically induced attraction) between both types of cells: The egg cell and the tubal mucous membrane excrete substances that attract and activate sperm cells. At the end, some tens or hundreds of sperm cells will actually reach the egg cell and organize themselves in a circular or radial orientation with their heads facing and concentrating on the egg cell.

At this moment so-called nutritive cells, the *corona radiata*, still surround the egg cell. From the evidence of *in vitro* fertilization procedures, it is known that in the next phase a so-called *pre-conception attraction complex* (PCAC) is generated for several hours (see figure 4). Under

the influence of the substances secreted by the egg cells and the nutritive cells, the sperm cells undergo important changes. For example, they lose their so-called *acrosome* (outside membrane). Without this happening, a sperm cell is incapable of fertilization. On the other hand the presence of sperm cells and related substances obviously evokes chemical reactions in the egg cell and its surrounding membrane (*zona pellucida*), making it more receptive to the eventual fusion of the two cells.

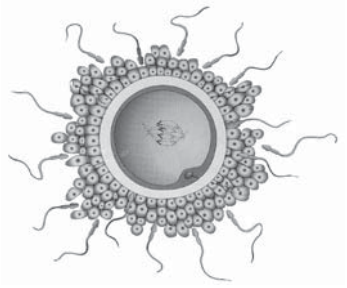

Figure 4. *Egg cell surrounded by sperm cells: preconception attraction complex*

So it is obvious that this biological attraction complex is a necessary condition for the actual process of conception. Both egg and sperm cells seem to participate mutually in the chemical and biological conditions that lead to the decision whether or not a sperm cell will enter (fuse), and if so, where, which one, and when. In a very subtle, mutual process of encounter and exchange of signals and substances, both cells prepare for fertilization and conception.[4]

In the context of a dynamic morphological consideration, it is important to establish that now a biological entity is formed by an egg cell with some sperm cells (see figure 4). We are dealing with a *state of activity* that is more than merely a passive combination of two cell types. Specific interactions take place within this biological complex. It is a biologically active and interacting whole that is occurring here. Within the initial few hours of this complex, conception is possible, but whether this actually happens or not depends on a large number of subtle, reciprocal chemical interactions and exchanges.

It should be emphasized here that to describe this process as the penetration of a sperm cell into the egg cell is clearly inaccurate. Only if the circumstances and conditions at a given moment and at a given place are appropriate can the fusion of egg cell membrane and the content of the sperm cell (nucleus and a small amount of cytoplasm with some important cell parts) take place. The continuity of the egg cell membrane is *never* interrupted or broken! The very common and somewhat aggressive image of a sperm cell penetrating the egg cell is not correct. In the pre-conception attraction complex there is no question of an active partner versus a passive partner, or of a penetrating versus penetrated partner, nor fertilizing cell versus fertilized cell. Rather both cells with their respective cell qualities play equal roles so that a subtle equilibrium of exchange and interaction is maintained. The morpho-dynamic process of fertilization is more akin to the gesture one may observe among animals in their mating behavior and rituals. In an extended process of exchanging signals of attraction and repulsion, a male and female animal circumambulate each other before copulation happens.

The very common and somewhat aggressive image of a sperm cell penetrating the egg cell is not correct.

This image, this gesture, of circumambulation becomes literally discernible in the movements (also observable during *in vitro* fertilizations) of the pre-conception attraction complex in that egg and sperm cells exhibit a tendency to rotate. The linear (radial) movement of the sperm cells turns into a spherical motion!

In order to understand what is being achieved during these first crucial hours, it is necessary to recall the strong polarity (inversion) of the sphere of cytoplasm (i.e., egg cell) versus the nuclear head (i.e., sperm cell). The power of attraction between these two types of cells is indicated on the physico-chemical level by their reciprocal biochemical interactions. From the point of view of the phenomenological observer, the attraction between these two cells should present no surprise.

To summarize: An egg cell is everything that a sperm cell is *not*. And vice versa. The anatomical, physiological, chemical, biological features of the egg cell may be characterized as the *absence* of the opposite of those features. In the egg cell sperm cellularity is most absent, at least at the sensorial level. One might state that a fulfillment or completion takes place when an egg cell encounters a sperm cell. What has been differentiated can now become reunified in that the sperm cell reflects to the egg cell what the egg cell is radiating transcendentally and supersensorily (*sinnlich-übersinnliche*). The fact that both cells eventually meet each other is not serendipitous, but in fact reveals an intrinsic necessity or purpose. Both cells belong to each other; they *fulfill* each other. This is achieved quite literally in the pre-conception attraction complex in the way both cells and their respective qualities constitute a unified entity as a reciprocal polarity.

Exposition to a higher level: *Steigerung* (intensifying)

Individually, both sperm cell and egg cell represent the polar one-sidedness of what is or once was the starting point for both cells, i.e., *a cell*. Both cells are differentiated from the same primordial gametes. In their characteristic one-sidedness, one of them is polarized into a nuclear head and one into a sphere of cytoplasm. In this respect both cells are at the end of development and therefore are dead. Both cells are specialized, each incapable by itself of providing the substrate for a new development. Only by their encounter, the meeting of both one-sided entities, can the substrate for a new development be provided.

This, however, should not lead to the false conclusion that at conception the beginning or start of life takes place. As to development, as to gesture, both gametes have come to an end, but biologically both are still *living cells*. The whole morpho-dynamics of conception, as described above, is to be understood within the domain of life, of living cells, of biology. A human conception therefore does not mark the beginning of life; it marks the beginning, the *start of new development!*

What is the quality of both cells during those few hours, in a morpho-dynamic sense? To understand this thoroughly, the reader should consider the image of "the cell" as it is usually presented. Very often a model of "the cell" will appear on the first page of a standard biology textbook, since the cell is regarded as the foundation, the cornerstone, the basic entity of life on this planet. The cell is considered to be the archetypical entity of life. What becomes visible (or better: knowable) in a pre-conception attraction complex if one takes the egg cell as being a sphere of cytoplasm and the sperm cell as a nuclear head? When one turns the cell inside out, reverses or inverts it, so to speak, then the pre-conception attraction complex appears! In the current relations of living nature and biology (so of the cell), the nucleus should be in the center; now however, in the PCAC, the nucleus appears in the periphery. Normally *one* nucleus in the cell is present as the coordinating and

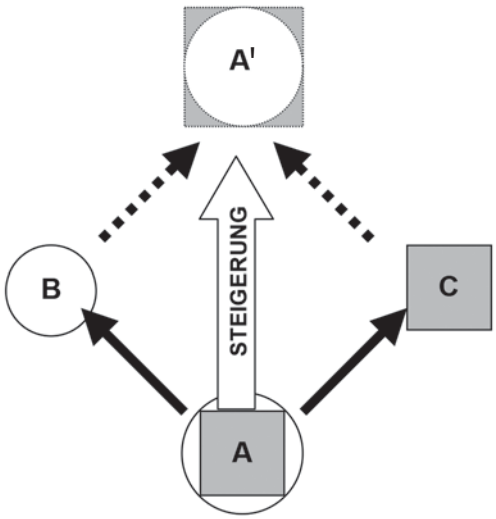

Figure 5. *Schedule of a so-called "Steigerung" or functional elevation (synergy) in the pre-conception attraction complex. A: the level of the cell; B: egg cell as "cytoplasm"; C: sperm cell as "nucleus"; A': the "turn inside out" of situation A on an energetically higher level; gray square: nucleus; white circle: cytoplasm*

organizing center. Here in the PCAC however there are *many* nuclei present in the periphery, represented by the numerous sperm cells that group and gather themselves around a sphere of cytoplasm. Cytoplasm as a rule should be metabolically active around a nucleus. As a rule the nucleus should be the center of the cell structure. Now, however, nuclei (in the plural) are moving in the periphery, and it is a sphere of cytoplasm that represents a resting center around which things are turning and moving. As a rule the periphery of the cell should be an open boundary through which the cell is communicating and interacting with its milieu. In the pre-conception attraction complex, the situation is quite the reverse: The dynamic, active component formerly in the center, in the middle, is now in the periphery. The *closed* quality of the sperm cell (*cellularity*) is actively present. The complex as a whole seems to be a cell *involuted*: turned inside out and completely reversed.

The fact that both cells eventually meet each other … reveals an intrinsic necessity or purpose. Both cells belong to each other; they *fulfill* each other.

Many more phenomena could be discussed at this point, but the aforementioned details will suffice since it should be clear by now that the pre-conception attraction complex is the complete involution—reversal and inversion—of *a cell*. In the hours before the actual conception, something is built, constructed, and achieved. This is not a matter of cell fusion in the sense of the mixture of two qualities on an energetically lower level. Something actively is achieved. During this achievement, the interactions between the normal and usual relationships of biology are transcended.

The whole process seems to be a kind of *de-biologicalization*: Normal relationships are reversed and turned inside out, usual biological relationships are lost or left behind. Goethe applied the term *Steigerung (intensifying* or *raising)* to situations like this. He meant that two polarities in their interactions bring to light features that each term of the polarity on its own does not exhibit. Can we apply this phenomenological notion to the biological events taking place in the context of human conception? It may be stated that here *cytoplasm* and *nucleus* translate or raise (*steigern*) themselves to the level of *the cell* (which in fact also represents *a cell*).

But what a cell is being achieved here! A complete world upside down, inside out! The normal relationship of the sensible and perceivable order of things is turned upside down, turned inside out. That is why the neologism de-biologicalization is applied here. The normal cellular biological relationship is reversed to its opposite. What should we imagine about this opposite? In the world of our senses and perceptions, the relationship of time and space is evident, it is *the way it is*. Everyone who takes the reality of an immaterial, spiritual dimension seriously can agree with the next logical consequence, which involves reversing the relationship between time and space itself. Considered in this way, the pre-conception attraction complex can be characterized as an opening of the usual and regular relationships of biology and life to their *opposite*, their *reverse*. It seems as if the *material* world and dimensions are being opened to their *spiritual* counterpart.

In this subtle equilibration of weighing pros and cons, of encountering, of meeting, the cellular biological dimensions may be opened up to the meeting, influence, and participation of a *third* dimension—third, in the sense that this could be the dimension of a new (yet to be born) human being, a spiritual being, a spiritual energy that may opt to make contact with this bio-substrate offered and opened up by two other humans.

This also means that this being is not forced: nothing *must* or *should*. Considered in this way, we are not dealing simply with a process of fusion

to a new dimension. Nor are we dealing merely with the fertilization of one (passive) element by another (active) element in the sense that sperm fertilizes egg or spirit fertilizes matter. Here conception takes place in the literal meaning of the word, not in the sense of *making* or *building* but in the sense of *receiving* and *accepting* (*con-cipare* = "to gather together, receive"). The essential morpho-dynamics of human conception is that during the so-called pre-conception attraction complex the necessary circumstances for potential fertilization are balanced and weighed so that the fusion of the two cell membranes can be undertaken. This takes place *before* the moment of fusion and represents a subtle interactive meeting in which all could happen but nothing has to happen. If the content of the sperm cell unites with the ovular cytoplasm, then within a few hours the fusion of the two (pro)nuclei follows, an event that usually is indicated as the moment of conception.

However, within the dynamics of the whole process as described here, the latter processes (fusion of the nuclei and so on) are to be interpreted rather as the result or *consequence* of conception, not as their cause! For at that very moment of fusion, the usual and regular biological relationships are restored and normalized. The fusion of the two gametes may be considered as the manifestation on a lower level (energetically) of a connection that evidently occurred between matter and mind, between spirit and matter just before that moment. The pre-conception attraction complex is a necessary but not sufficient condition for a kind of *vertical* conception, so to speak, an acceptance of spirit in and by matter.

Human conception: Beyond the act of reproduction

In or during a pre-conception attraction complex, biological relationships are raised to a higher level of energy. These circumstances offer the right condition for a non-biological or immaterial principle to interact with the bio-matrix that is discussed here. We may be dealing with the dynamics of a vertical conception as the link or interaction between mind and matter. It is an act of incarnation. This has the ethical consequence that we are not dealing with the dynamics of making a new human being, of making a child. In the conditions of a pre-conception attraction complex offered by a man and a woman, a third person, an other being may or can incarnate. A man and a woman get a baby. They receive a child. This is not a matter of making or building. Rather, in the subtle equilibrium of interaction of this cell it is a meeting, an encounter, a reception that takes place.

In the conditions of a pre-conception attraction complex offered by a man and a woman, a third person, an other being may or can incarnate.

There is good evidence that this way of conception is unique to the human being. In comparison to other primates and mammals, human reproduction is often considered as extremely crippled and inefficient in the sense of reproduction. The act of recreation of the individual, the recreation of a species—indeed, bisexual reproduction itself—is not at all an efficient method or way of reproduction. But this handicap is not specific to the human being as a species. The benefit of bisexual reproduction (in comparison to unisexual reproduction) makes possible genetic variation and exchange of genetic materials. The chance, however, that a human sperm cell will meet a human egg cell is relatively small, when compared to the situation among animals. Many so-called hazardous factors will determine whether or not fusion takes place. Moreover, in the human being many other thresholds need to be crossed

before a full-term newborn comes into being. For example only a relatively few embryos succeed during the process of nesting (*nidation*) actually to become implanted into the uterine mucous membrane. This and other barriers may be advanced as reasons for saying that the human being is a poor or inefficient reproducer. But in light of the way human conception has been described in this article, we may conclude that human conception in fact is not a matter of re-production. ***The human being does not reproduce itself.*** Two parents do not recreate themselves in their offspring and progeny. Every human conception is a matter of Three, of a third one. Every human being is a unique biography and individuality. Ultimately, we may say that in human conception, evolution culminates in a being that is able to escape reproduction or recreation of the species! The culmination of human evolution is conception of and into freedom.

Two parents do not recreate themselves in their offspring or progeny. Every human conception is a matter of Three, of a third one.

Artificial reproduction technology (ART): What are we doing?

What about artificial human reproduction? What actually happens in an *in vitro* fertilization, in view of this essay? What happens during ICSI, a relatively new method of artificial fertilization in which a sperm cell is injected into the cytoplasm of an egg cell? The former method, the classical *in vitro* fertilization, can be interpreted as the forced manipulation of conditions **necessary but not sufficient** for a human conception. Obviously a pre-conception attraction complex can *function* under such artificial conditions.

The difference is time and place. One can compare the actual moment of *in-carnation* of a spiritual human germ by means of a pre-conception attraction complex to the process of someone awakening. In the latter case one speaks of a person returning into his or her body, at least from a phenomenological point of view. Clearly we are able to rouse people at the moment *we* want by shaking them. We more or less force someone to return from sleep and absence. In this sense we are nowadays able to *shake up* the subtle biological conditions of conception in order to *wake up* a new human being. But also evidently there are less subtle ways to get people to wake up. Considered in this way, the ICSI procedure is a form of biological and conceptual violence. If one has the mind for it, one can observe how the egg cell initially resists the attack of the incoming needle. Suddenly the cell membrane (*zona pellucida*) collapses and the needle intrudes. Is this rape on a cellular level? Whatever the case, it is far removed from the subtle "are-we-going-to-or-are-we-not-going-to" dynamics of a pre-conception attraction complex. Nothing of the subtle freedom and liberty so characteristic of a human conception is evident. In ICSI we are dealing with biological constraint and compulsion.

Of course, ICSI works. But, as the proverb says, "success does not prove correct understanding." In about 10% of the ICSI trials, the procedure results in fertilization (conception). It is therefore beyond doubt that, in such circumstances and under such conditions, incarnation is possible. Considerations as to the quality of such an approach to the process of incarnation go beyond the scope of this article. Here the aim has been to explore the dynamics of the events involved in the process of incarnation during conception. The events cannot of themselves prove that conception involves also a vertical dimension of receiving and connection. Those open to seeing conception as a binding between matter and spirit, however, can find, if not proof, at least a scientific phenomenological foundation for this hypothesis.

Endnotes

1 Of course, genetically (i.e., at the level of chromosomes) the egg cell has to be distinguished from any regular body cell (somatic cell) by the fact that it (just like its male counterpart, the sperm cell) possesses only half of the regular number of chromosomes. But this fact is not of any importance for the dynamic morphologist who is concerned with describing the egg cell as a cell.

2 A micron is one thousandth of a millimeter.

3 In case of a polarity, the pathology of forms and processes often confirms the essential characteristics of the gesture in the normal process or in the normal shape. What seems to be sound and normal for the one pole is a handicap and pathological for the opposite pole.

4 It is for this reason that the biological complex at stake is indicated as pre-conception. Current biology usually indicates the moment of fusion of the two nuclei of the two gametes as the actual moment of conception.

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