The Embryo in us – A phenomenological Search for Soul and Consciousness in the prenatal Body.

Wine got drunk with us, not the other way.
The body developed out of us not we from it.
We are bees and our body is a honeycomb.
We made the body, cell by cell we made it
Rumi (1207 - 1273)

Lost body

In the last two decades a tsunami of pseudo-dualism and materialism is coming up in biology, psychology and philosophy. Based upon concepts about the function of our brain as produced by modern neurophysiology in great pace a new perspective about the human soul and consciousness is introduced and swallowed by the general public. To summarize the gospel of modern brain philosophers: It is our brain that is ruling our mind. All that we feel, think, do is 'brain. In this paradigm everything that we all are able to experience as the conscious or subconscious activity of our mind or soul is attributed and reduced to 'nothing but' the activity of hippocampi, cerebral cortical areas and so on. The post-Cartesian soul which still was more or less defendable as the imponderable *res cogitans* dimension in our mind, has been abandoned. Neurophilosophers claim that Cartesian dualism of body and mind is overruled by the evidence of the brain as the definitive physical substrate for our consciousness, our speech and our mind. Implicitly however and without any modesty a new false dualism is introduced in the form of a body–brain dualism. The brain is a 'special' organ in the body and there our consciousness occurs and is performed by neuromachinery. The Dutch neuroscientist Swaab proclaims that the body only serves three purposes: to feed, to move and to reproduce our brains. "We are our brains" is the message. You have to consider everything you may feel or experience as a 'non-body' or imponderable reality in your head or in your body (like the pain in your toe) as 'illusions produced by the brain'.

Lost soul

There is a defense against this pure reductionistic materialism and that is: Be phenomenologist! Do not take the stance of the scientific onlooker (observer) but in contrast take the primary stance of the participator and take for true what you sense and experience in and of your body. That is your primary reality, the 'world of senses' in fact is the reality before the Cartesian split of mind and body. A phenomenological approach takes also for true what your experience is telling you and in this way not only overcomes but also includes the virtual and secondary reality of the 'brain facts'. Modern neurophilosophers make the philosophical and methodological mistake that the primary reality we live in is not the reality we think or can observe via our whole range of ponderable onlooker-instruments but it is the reality we experience it. Consciousness and soul are experienced realities. Although they are imponderable and therefore not measurable they are yet evident for everyone. It is the modern scientific ascetic attitude to think spirit so to say away that denies this. "I am my brain" is not a fact, it is paradigmatic choice. Modern 'brain thinkers' nearly all confuse the condition for a phenomenon for the phenomenon itself. Indeed they found the substrate for consciousness in brain activity, but no one is ever able to

measure what you experience when you are doing mental experiments under the scan of the onlooking scientist. He/she registers the condition for a phenomenon (e.g. consciousness) not the phenomenon itself. He/she even cannot register that, because only you are the one who knows, who realizes (!) what it is to think that thoughts, to live that particular body, to experience that given awareness. No neurophysiologist can bridge that gap between the primary reality of the '*Lebenswelt*' or the 'world of senses' as the philosophers call it and the secondary reality of the body after the Cartesian split of mind and body. In the reality of the body that you live, mind and body, spirit and matter are never separated. Discriminating those two realities is one; this is in fact the great philosophical contribution by Descartes. Separating them and think the twofold polarity that mind and body, spirit and matter apparently are into a dualistic split is a second step and in general acceptable as a methodological and practical reduction. But as A. T Still states: "Human form (matter) and function (spirit) are inseparably intertwined". But to deny systematically after that split the reality of mind as an illusion created by an organ of that same body, is a intolerable and fatal philosophical accident and reduction of our reality.

We do not have a soul, we are soul

Neurophysiologists study indeed the substrate for soul, for consciousness but every time you find an anatomical or physiological or genetic phenomenon ('body') apparently connected and associated with a certain mental activity ('soul') it does not mean you found the last phenomenon itself. Apparently brain activity is a necessary but not sufficient condition for a quality like consciousness. One still is at risk to consider the condition for a certain matter (body, brain, gene) for the matter itself (soul, mind, feature). A similar reductionistic view nowadays prevails in genetics. As biologist I have never perceived genes (I mean here the modern concept of 'gene' as a formulated DNA-structure) to be an active and causative principle in a living organism. Yes, genes play an important role in the phenotypic appearance of organisms, but it as a necessary (apparently) but not sufficient condition. It are organisms that have features and properties or are ill and I never have seen an ill gene or a gene with a certain property like being able to move or digest. But yet without comment nearly everybody tends to believe the concept that genes are active principles and are causing organisms. As a (phenomenological) embryologist I have to reject that view completely. Only in pathologically abnormal and in experimentally manipulated conditions (and of course in the evolutionary process of mutational changes in the genome) it appears to be the deviation of the normal pattern that causes the related different 'new' phenotype or phenomenon. In the normal integral and integrated situation of the functioning organism however it are not the genes that cause the phenomena, the organism itself performs its biological activities and functions that characterize it (it moves, it digests, it becomes ill).

Modern genetics and neuropsychology try to convince us of the opposite: thinking is (synonymous with) brain activity, inheritance is (synonymous with) gene, memory is (no more and less than) hippocampus process. Process and structure, phenomenon and condition are confused here. We became walking brains, competing genes. After some four centuries of post-Cartesian reductionism this is what has been left of our soul. The secondary reality of the observed and analyzed body of anatomy and brains, the body that we so to say have, prevails over the body and the consciousness that we are, that we live and experience. With great certainty and

persuasion modern psychologists consider a lot of the reality we experience in our body, the reality of our feeling and awareness as illusionary. Pain is an illusion, it not in your toe that you feel your pain that is only an illusionary projection by your brain. And free will? Forget it! Your brain knows better and milliseconds before you make a choice cortical reflexes already have 'predicted' what you are going to do.

Mind in an embryo?

What about an embryo? In the modern view of neuropsychology the embryo does not make very much chance to be accepted as a being with a mind, a 'soul'. In an embryo the least manifestation of a functional brain is completely absent. When after some weeks in the embryo a first brain organization becomes discernible you have to wait for the fetal phase in order to see some substrate of a brain physiology like movements or a deducible EEG activity. Like your body in the modern somatic philosophy has been 'emptied' and 'ghosted' ('you are not present there in that body', 'there is no self or soul living this body') the embryo has been proclaimed to be a brainless and therefore at least a unconscious being.

I became embryologist it in the sixties and seventies of the last century. In those days the debate about soul and mind still was open and not yet terrorized and beaten to death by colorblind one-eyed neurophysiological thinkers There you could hear a famous psychiatrist rephrase questions like "Is it possible for we cells, before and after specially neural tissue arise, to reproduce in later phases of the life cycle transforms, or variations of our first experiences?" (*Robert Laing* in *Facts of life*). Psychologist claimed the possibly of a prenatal subconscious experiencing of traumatic events.

In this context I met the work of the German embryologist Erich Blechschmidt (1904 – 1992). Many osteopaths and Craniosacral therapists consider the biokinetic model of embryonic development that Blechschmidt developed as a good explanation of the processes that rule the formation of the body and the organs. As a phenomenologist I am however not so much interested in causes and explanations but in understanding and finality. I am an embryologist on the search for spirit i.e. for an active principle 'behind' the formed organs and body. I search for the 'en-act' principle (spirit) that is trying to realize itself via and by means of the realized 'ex-act' dimension of the body[1]. The body as an act and the psychosomatic entity that we also are as the 'actor'. The realisor ('maker') and the realized. I consider the body as the appearing result of a formative act, a creative act if you like.

An embryo with a soul

So for me leading questions as to understanding the human embryo became for example: Who or what is realizing itself there? What are we actually doing when we are an embryo? How do we exist there and then? As a being of soul and body of course because that is how I experience myself every second of my life. Not my muscles move me, I move my arm. Apparently I do that <u>with</u> my body (a locomotion apparatus as necessary but not sufficient condition), not my body is moving me. One

[1] 'En-act' like ex-act 'is derived from the Latin word *act* or *actum* which means 'deed' and 'made'. 'Ex-act': what has been made, realized, 'en-act; that what makes or realizes (itself).

may extend the concepts of E. Blechschmidt in recognizing that an embryo behaves. It is (still) shaping its body, it moves, it performs (literally). The first manifestation of behavior we exhibit as the psychosomatic body-mind being that we are, is our morphological behavior, is in fact our body. Next to that similar behavior is shown, similar gestures are made on the physiological level, but this also is performance, act of the en-act dimension in us. Going upright, finding your balance, centering, it is an act of the soul, of the human Self or spirit but before you are able to do that psychologically you perform the gesture physiologically when you are one year old, trying to get upright in a playpen. And even that is not the first time. The first time you found your balance was when you shaped and organized the bodily organization that is a prerequisite for balancing and being upright, so as embryo. The human body is the only primate and mammalian body where the gravity center is organized inside and within the body. To come to yourself as a human being you need the organization for that i.e. a body (not only a brain) that can do so. This is exactly what you do in the growing and shaping of your body as an embryo: you perform here the act of going upright and balancing in a morphological way.

"Soul is pre-exercised in the body" is my rephrasing of the concepts of Blechschmidt. Our body is behavior, human behavior to be explicit. The body is not a thing, an anatomical substrate; it is a performance, a function, a behavior. Soul does not have a body, it is body; body does not have a soul, it is soul. Read the words of Rumi at the beginning of this article. Even your skeleton and brain (organs that for example are nearly structuralized to death and physical substance) are 'on the move', are processes. I learnt from the embryo: Motion is primary, form is secondary. Forms comes out of motion (and not the reverse as reductionistic thinkers always propagate) and in that motion a behavior is performed. The transparency of your lens is not a material property, it is a lifelong activity exercised by those lens cells in the transparency of the crystallines they produce. Your body as an act and in the embryonic phase you act your body as a pre-exercise of what later is a physiological and psychological capacity.

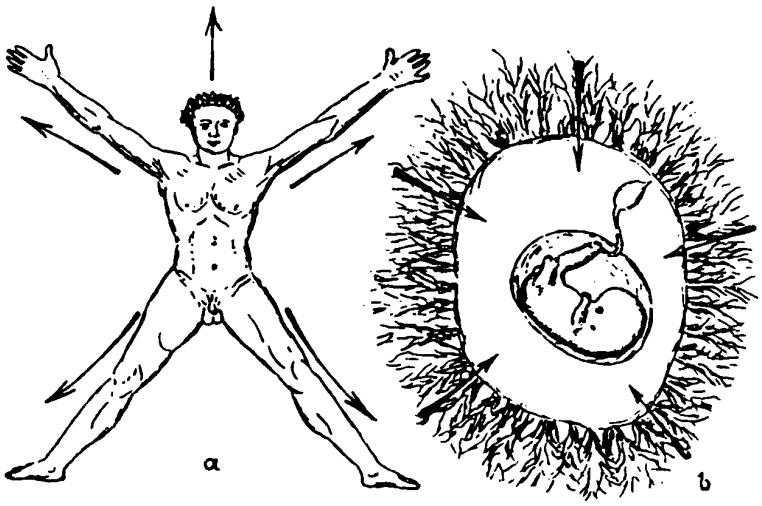

FIGURE 1
Revolution of the orientations of being between an adult (a) and an embryo (b).
From: Dynamische Morphologie, O.J. Hartmann, Frankfurt/M., 1959.

Centripetal existence

Within the embryonic way of life form and function are still related and linked together firmly. The fact that the form and function of an arm for example are tuned so perfectly and harmoniously may be due to the phenomenon that the function of the arm as an instrument for grasping for example has been pre-exercised embryonically while growing out. In the adult organism where the forms still, function is 'released' (liberated) on another higher level: physiological function as a released growth gesture. Erich Blechschmidt even takes a step further and applies this principle of releasing function from the growing structure to the level of psychological gestures and functions. Bodily functions, physiological functions are pre-exercised as growth gestures and growing movements in the embryo. In this respect a human being has already breathed long before he has taken his first breath after birth. The dynamics with which lungs, thorax and diaphragm are developing and unfolding may be considered as a type of breathing because it are breathing movements. Considered in this way, an embryo looks, grasps, walks, it all is morphological behavior.

Considerations like before give new perspective to the direction and the orientation of embryonic existence. Usually embryonic existence is considered as a biological process that produces or results in human behavior. We think so to speak from inside to outside, from center to the periphery, in other words: centrifugally. In this view there is a fertilized egg cell at the beginning[2], which next grows up to be a human individual body and next to a psychological individual: man including his mind or soul is a product of this process. Mind is a consequence of the body and body formation. In this view the embryo also deserves something like a general non-individual human status but in the embryonic phase there is no talk yet of individuality or personal existence.

The embryonic existence however may be characterized as the orientation from outside to inside, i.e. centripetally (See FIGURE 1). As an adult human we express ourselves by means of our body: the world is our aim and the body is the instrument for this purpose. The embryo on the opposite still 'impresses'itself into a bodily organization. Embryonic existence therefore is a kind of silent and introverted existence. The idea that an embryo is not yet doing anything and is not acting yet is a great misunderstanding and devaluation. The action, the performance however is directed towards itself, inward. In this view embryonic performing also represents the expression of a human being and its soul as primary. The human being manifests itself in the first order by means of growth gestures and form movements, afterwards by means of (released) physiological processes (behavior) and later on by means of psychological behavior and gestures.

[2] Which is nonsense, we do not start 'as a cell'. You are not built up from or by cells. The unity of life is not the cell, the particle, but the unity of life is the organism, the whole. The embryo organizes itself in cells and via that in organs and tissues, not the other way around. Your first appearance is a zygote, an unicellular body.

The embryo is still in you.

In FIGURE 2 the so-called craniocaudal gradient of embryonic development is represented. With this notion is usually indicated that in the cranial pole or domain of the body development is always ahead of the developmental processes in the caudal pole or domain of the body. This also relates to the fact that in the cranial pole the development of organs tends to reach earlier the more or less 'final adult' stage or organization than in the caudal domain of the body. Your head so to say becomes 'old' or 'adult', your viscera stays 'young' or 'embryonic'. In FIGURE 2 for example one can observe that the development of arm and hand (always) is ahead of the development of foot and leg. This phenomenon will also become manifest and 'repeated' in the physiological and psychological ripening of the limbs and locomotion. Another body axis where one may observe such an gradient is the disto-proximal gradient in the limbs: hands and feet are 'older' than shoulder and pelvic region, the latter for example as the domain of the limbs where you indeed go on with growing and formation far beyond your childhood.

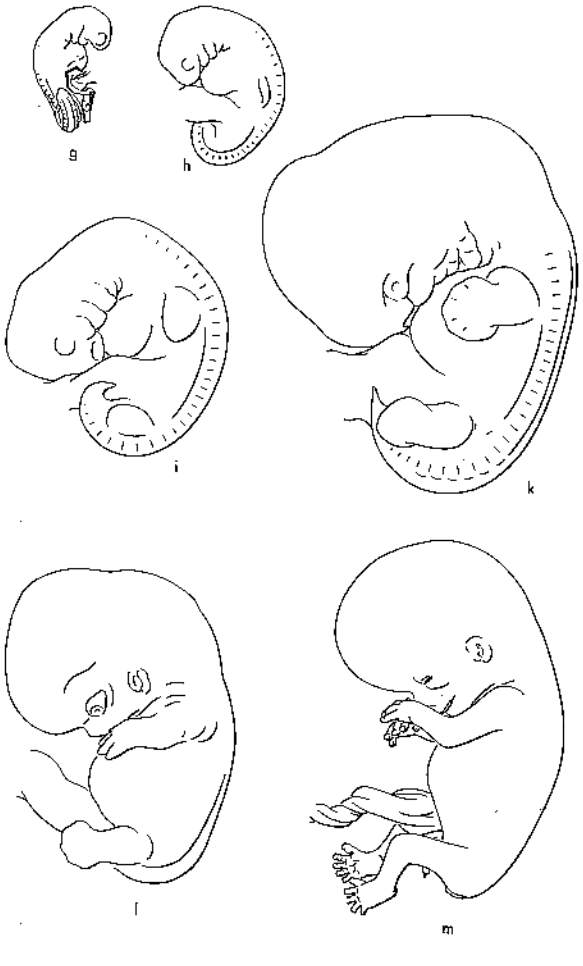

FIGURE 2. Embryonic stages of the human embryo. In series: age of 26 days (g), about 4 weeks (h), about 5 weeks (i), about 6 weeks (k), about 7 weeks (l) and 3 months (m). From: The human embryo, E. Blechschmidt, Stuttgart 1963.

One could describe the craniocaudal gradient as the polarity between movement and form, between embryo and adult, between process and structure. Actually in the caudal pole of the body the processes more ore les tend to continue the embryonic way of life as described here before, i.e. exhibiting morphological behavior with the physical body still in process, in metamorphosis. On the opposite side one may observe in organs the tendency to come more and more to structure and to 'anatomy' so to say. There (brain, nervous system for example) function indeed becomes more 'released' from morphological (growing and metamorphosing) activity. A good way to notice this gradient or polarity is comparing for example a liver (caudal) with a typical 'cranial organ' like the brain. In the liver function and form are still in motion while in brains anatomy and structure becomes essential for the physiological function. Like in the embryonic phase, in the liver the en-act dimension still remains active in a morphological process, deeply involved and intertwined with the matter while

cranially the possibility for mind, the en-act is to become released from the matter body process and to function more bodyfree. Think on the 'imponderable' mobility in your mind. This means however that the embryonic way of being is not a past, not a phase in our life you left behind, it is actuality and in a great part of our body the interaction between body and mind 'still' is centripetal.

The return of the soul

Could this be the expression of a polarity in our organism as to 'interaction' between the en-act and ex-act dimensions of our psychosomatic being? In the 'caudal' ('visceral') dimension of our body our mind seems to stay connected and intertwined with the body (matter) as is the general gesture in the embryonic phase. On the opposite pole the body tends to become more structuralized, to become 'anatomy' so to say. Here mind and body are more or less disconnected and disconnecting to enable mind to function more and more 'body free' functioning in physiology, psychology and … consciousness? Could it be that the embryonic way of being is the sleeping consciousness way of acting the body ('life') and that everywhere in the body where the process tends to become structure and anatomy and where embryonic vitality and regeneration power reduces and even sometimes disappears ('death'), awakening consciousness occurs and is enabled? What a fantastic idea: vitality and consciousness as oppositions, the more vitality the more we sleep, the more death and structure the more we awake! In this view mind is everywhere in the body as acting principle but levels of consciousness occur in relation to the degree in which the embryonic processes becomes subdued to the structure tendency. The whole body as a psychosomatic mind-body manifestation with a great range of levels of consciousness. Your will sleeping in your caudal pole, your limbs and muscles? Your cognitive soul awakening in head and sense organs?

This all may sound as a too global concept but I can describe the gradient we are dealing with not only in craniocaudal 'direction' but in more than eight different body dimensions, for example dorsal-ventral, parietal-visceral, distal-proximal in the limbs, centripetal and centrifugal. Actually this gradient is everywhere. And 'nowhere': it is a fundamental principle of polarity that rules the psychosomatic organization in all directions, levels and dimensions. I tend to call this the magnet or holographic principle of the craniocaudal gradient which helps to overcome the Cartesian error to localize soul, psyche, consciousness in a given organ or region. Not only the brain is the domain of soul, mind or psyche: besides it controlling function (as so many 'head organs' like liver, heart, kidneys exhibit) it only represents the functional possibility of a high degree of awaking (self) consciousness.

This approach makes the body again what it is: not an appendage of a brain but an instrument of the soul from the very first day of your life on. Consciousness is not synonymous or congruent with 'soul'; it is a function, an activity of the mind. The whole range and palette of consciousness shows that our soul is not a pink cloudy conceptual and illusionary 'something' but a 'soul body' just as complicated as our physical body. Not one organ is specialized in psyche, maybe some organs (brains, sense organs) are more functioning in consciousness than others but mind is everywhere. Germ layers for example are not only physical morphological principles but it are also physiological and psychological gestures and functions. The body is not a machine that functions; it is function, a function of the mind. To describe this

psychosomatic morphology *in extenso* goes far beyond this article, but it is possible. More important is that such an 'anatomy' would give us the body back that we are, that we live, where we do not have hippocampi at all in our heads, but where we think with our heads, feel also in our heart and suffer pain in our toes. We <u>are</u> a consciousness and <u>have</u> a body.

Jaap van der Wal MD PhD
Dynamension – Understanding ourselves as embryo
W: www.embryo.nl
E: walembryo@home.uni-one.nl

18.330 words exclusive spaces and (sub) titles and title poem, including footnotes

FIGURE 1
Revolution of the orientations of being between an adult (a) and an embryo (b).
From: Dynamische Morphologie, O.J. Hartmann, Frankfurt/M., 1959.

FIGURE 2.
Embryonic stages of the human embryo.
In series: age of 26 days (g), about 4 weeks (h), about 5 weeks (i), about 6 weeks (k), about 7 weeks (l) and 3 months (m). From: The human embryo, E. Blechschmidt, Stuttgart 1963.