

The concept of “embryo” between the Indo-European and the Semitic worlds: a multilinguistic and multicultural analysis.

Francesca Bertonazzi

Università degli Studi di Parma
francesca.bertonazzi@studenti.unipr.it

Abstract: The present contribution aims to a multilinguistic and multicultural analysis of the concept of ‘embryo’ both in Indo-European and Semitic worlds.

The question about embryo’s status is strictly linked to the present ethic and medical scientific environments. Leaving out bioethical problems, this contribution sketches the main features of the concept of embryo mostly from a linguistic point of view and then tries to value some cultural consequences.

Starting with the presentation of the *Garbhopaniṣ ad*, an ancient Sanskrit text, composed between the 7th and 4th centuries BC, that illustrated the development of embryo from the fertilization and the very first weeks of pregnancy to birth, through a representative selection of Greek and Latin Authors who explicate embryo’s nature, its features, its development and the moment in which a foetus can be considered a human being (the *exempla* are selected from both medical and philosophical classical texts), we close with a few words about the “embryo” in semitic languages and cultures.

The analysis is about linguistics (with a close terminological examination) and cultural studies.

Key words: multilinguistic and multicultural analysis; Indo-European and Semitic languages; cultural studies; embryo; applied linguistics.

Introduction

The concept of “embryo” is hard to define nowadays, and so it was in the ancient world. Modern technologies help us in defining stages of development and features, but many problems emerge talking about the existence before birth: why some parts take shape before others? Why are some embryos male and others female? When does the sparkle of life enter into the foetus allowing it to be considered a person? Today some of these questions find a complete answer in medicine and biology. This presentation wants to display how the Indo-European world answers to the questions mentioned above and a few others. In some cases, Semitic culture will be examined for a comparison.

Starting point of the presentation is a Sanskrit medical-philosophical essay, the *Garbhopaniṣ ad*, which illustrates, in a chronological order, the development of the embryo (*garbhas* in Sanskrit) from the fertilization to the birth: for every stage of development there will be a comparison with other significant texts from Greek, Latin and Semitic culture, underlining linguistic and cultural affinities or differences.

Texts regarded for this paper: *Garbhopaniṣ ad* (hereafter abbreviated as *Garbh.Up.*), Aristotle’s *ἱστορίων* (*History of Animals, H.A.*), Aristotle’s *Περὶ ζῴων γενέσεως* (*Generation of Animals, G.A.*), Hippocrates’ *Περὶ γονῶν* (*On generation, On Gen.*), Hippocrates’ *Περὶ φύσιος παιδείου* (*On the nature of the Infant, Nat.Inf.*), Macrobius’ *Somnium Scipionis* (*Dream of Scipio*), Aulus Gellius’ *Noctes Atticae*, Censorinus’ *De Die Natali*¹⁰⁶ the Bible, the Torah, the Koran.

This short presentation of the embryo’s question does not claim to be complete and exhaustive¹⁰⁶; only significant texts will be presented and discussed; in particular only the most significant pieces of the Latin tradition, largely related to the Greek one, will be offered.

¹⁰⁶ For a general bibliography see at least: Benveniste (1945), Edde (1993), Filliozat (1943; 1975), Hoernle (1905), Krug (1990).

All translations from Sanskrit, Greek and Latin are mine; for Hebrew and Arabic the translations are provided by the critical edition of texts. A short linguistic apparatus in the endnotes, especially for the Sanskrit pieces, is aimed at a better understanding of the text.

Stages of development

Fertilization

The traditional idea, accepted by most of the ancient authors, is that the embryo is formed from the union of blood (woman's product) and sperm (man's product). In the very beginning of *Garbh.Up.* the anonymous Author claims that the embryo has "two origins"¹⁰⁷, and further in the text he adds: "the embryo is born of the union of blood and sperm"¹⁰⁸; more precisely blood is produced by a sort of liquid secreted by the body whereas sperm originates from the spinal cord¹⁰⁹. Hippocrates instead joins two different theories: according to the first one, sperm comes from all over the body; while, according to the second one, it comes from the brain and through the spinal cord arrives into kidneys and then into testicles¹¹⁰.

In *Garbh.Up.* there is no an indication of when a woman can surely know she is pregnant; Aristotle on the contrary says she can be sure of it because of the dryness of the womb, ideal condition for sperm to remain into uterus; if it does not slide out within seven days, the woman is pregnant¹¹¹.

Another question is how the gender of the embryo can be established; *Garbh.Up.* makes the issue clear in few words: "A male is created by a male flux excess, a female is created by a female flux excess"¹¹². Similarly Hippocrates: "If the weakest semen is bigger than the strongest one and controls it, (the embryo) becomes female; if instead the strongest semen is bigger than the weakest one and controls it, (the embryo) is male"¹¹³. Aristotle, on the other hand, amply deals with the gender issue and presents different hypothesis elaborated by Greek philosophers in order to refute them. First of all, Anaxagoras asserts that the opposition of gender is in the semen: a male embryo places itself on the right part of the uterus, a female embryo on the left part. According to Empedocles, a hot uterus generates a male, a cold one a female: high or low temperature is caused by menstruation flow; Democritus affirms that the difference is due to the prevalence of sperm over the blood (*G.A.*, 4,1 764a). However, the Aristotle's position is very clear: "the male's semen is different, because the male possesses in itself the principle that can make it able to move and to concoct the nourishment, instead the female's semen contains material only"¹¹⁴.

After defining the causes which create a male or a female foetus, Aristotle adds that the complete development of each part of the female embryo is slower than the development of the male one: as a matter of fact, girls born at ten months are more common than boys¹¹⁵; the reason of this delay is the different heat between male, whose flesh is hotter, and female, whose flesh is warmer. Similarly Hippocrates considers the female semen weaker and moister and this is the reason of the delay in the growth of female foetus¹¹⁶.

¹⁰⁷ "dviyonī". *Dvi*:- two; *yonī*:- womb, from √*yu*- "to join".

¹⁰⁸ "śukraśo itasā yogād āvartate garbho". *śuklo*: "white; sperm", attested also as *śukras-*, from √*śuc*- "to shine"; *śo itā*:- "blood"; *garbha*:- "embryo", from √*grah*- "to receive".

¹⁰⁹ "rasāc cho ita (āvartate); majjātaḥ śukra (āvartate)". *Rasa*- "liquid secreted by the body"; *cho ita*= *śo itā* "blood"; *majja*- "spinal cord".

¹¹⁰ "[...] teíneí gaèr kaiè e\|v tou%ton e\|k pantoèv tou% swématov, kaiè diacwrei% e\|k tou% e\|gkefaélou e\|v thèn o\|sfuèn kaiè e\|v paèn toè sw%ma kaiè e\|v toèn mueloèn, kaiè e\|x au\|tou% teíenousin o\|doié, w\$ste kaiè e\|pieénaí tou% ulgrou% e\|v au\|toèn kaiè a\|pocwrei% n. \Ephèn deè e\|lq+ e\|v tou%ton yoèn mueloèn h\| gonhé, cwrei% paraè touèv nefrouèv: tauèt+ gaèr h\| o\|doév e\|sti dià flebw%on, kh!n oi\| nefroiè e\|lkwqeèwsin, e\|stin ofte kaiè ai\|ma sumféretai: paraè deè tw%on nefrw%on e\|rcetai dià tw%on o\|rciéwn mesaétwn e\|v toè ai\|doi%on [...]". *On Gen.*, 1,2-3.

¹¹¹ "Giénetai deè shmeí%on tou% suneilhfeénai tai%v gunaíxien, oftan eu\|qùèv geénhtai metaè thèn o\|milíean o\| toépov xhroév [...]. \Eaèn deè e\|ptaè e\|mmeíen+ (toè speérma) h\|meérav, faneroèn ofti ei\|lhptai: ai\| gaèr kalouémenai e\|kruéseiv e\|n tauétaiv giénontai tai%v h\|meéraiv.". *H.A.*, 7,3,583.

¹¹² "pitū reto 'tīrekāt puruṣo bhavati | mātūh reto 'tīrekāt striyo". *Pit*- "father"; *retas*:- "flux"; 'tīrekāt: *ati+reka*: "excess"; *puruṣa*: "male"; *māt*- "mother"; *striyo*: "female".

¹¹³ "h!n gaèr pollš% pleón toè a\|sqeneèv speérma +& tou% i\|scurotérou, kratei%otai toè i\|scuroèn kaiè micqeèn tš% a\|sqenei% e\|v qh%lu perihneécqh: h!n deè pleón +& toè i\|scuroèn tou% a\|sqeneéov, krathq+% te toè a\|sqeneév, e\|s a\|rsen perihneécqh". *On Gen.*, 6,2.

¹¹⁴ "Diafeérei deè toè tou% a\|rrenov speérma, ofti e\|cei a\|rchèn e\|n e\|autš% toiauéthn oífan kinei%on kaiè e\|n tš% zšéš kaiè diapeéteín thèn e\|scaéthn trofhén, toè deè tou% qhéleov u\|lhn moéon.". *G.A.*, 4,1 766b.

¹¹⁵ "Teéwv meèn ou&n pa%san thèn teleíéwsin tw%on moriéwn braduéteron a\|polambaénei toè qh%lu tou% a\|rrenov, kaiè dekaémhna giénetai ma%llon tw%on a\|rreenwn". *H.A.*, 7,3, 583b.

¹¹⁶ "Ai\|tion d' e\|stin ofti toè qh%lu ph%gnutai u\|steron kaiè a\|rqrou%tai, ofti h\| gonhé a\|sqenestéerh e\|sti kaiè ulgroteérh th%v qhleév h! tou% a\|rsenov: kaiè a\|naégkh e\|sti kataè tou%ton toèn loégon u\|steron toè qh%lu ph%gnusqai h! toè a\|rsen [...]". *On Gen.*, 18,8.

From initial stages to 3rd month

As regards the growth of each part of the body, Aristotle claims that is not so easy to define an exact order: “it is not easy affirming if the parts formed first are those which exist with a view to something else, or if something else exists with a view to those”¹¹⁷. A philosophic answer can be found few lines ahead: “the parts formed first are those which contain the principle and are on the top of the body. Indeed the head and the eyes are more developed in the appearing of embryo, instead the bottom parts, like legs, are small”¹¹⁸. Starting point of Aristotle’s theory is totally rational and philosophical, unlike the *Garbh.Up.*’s point of view: as all the aspects of life, the order of embryo’s growth is governed by a deity¹¹⁹ too, and so there is no uncertainty about development.

“At the right time, from perfect union, in one night, the embryo becomes a infinitesimal part, in seven nights roundness, after half month spherical mass, in a month compact structure, in two months the head is formed, in three months the feet are too”¹²⁰.

The Authors disagree about the very initial stages: Aristotle affirms that after the fertilization a thin membrane surrounds sperm, taking the form of egg (*H.A.* 7,6,586a), but he does not specify how long it takes. Hippocrates claims that female and male semen, joining together, make a single semen; staying in the uterus, being warmed up, it receives and emits a breath; then it grows and surrounds itself with a continuous and viscous membrane. At a certain point, something thin comes out (i.e. umbilical cord) while the rest of semen becomes a sphere into the membrane (*Nat.Inf.* XII,6). Then he describes accurately a six-day embryo: “It is like removing the shell from an egg, in which the liquid inside membrane is clear; the mass is red and spherical; in the membrane, there are white and thick fibres, rolled up with a light-red and thick liquid, and around it, on the external side, some blood clots. In the middle of the membrane, something leans out, and it seems the umbilical cord: it enables inspirations and expirations”¹²¹.

Similarly Gellius, quoting Marcus Terentius Varro, claims that, after fertilization, in seven days the embryo coagulates and takes shape; in four weeks penis, head and spinal cord are formed; in seven weeks a foetus completes its shaping in the uterus¹²². In a piece of numerology in his *Somnium Scipionis*, talking about the number seven, Macrobius quotes Hippocrates about the description of a six-day embryo¹²³, then, two other philosophers, Straton and Diocles, about the development of the embryo in following weeks¹²⁴. The opinion that, at beginning of life, embryo has a round shape is shared by both Koran and Torah. The very first Sura revealed by God to Muhammad is just about *al’alaq*, the clot¹²⁵. Also a well-know psalm, Psalm 139,16, states: “Your eyes saw my *golem*; all the days ordained for me were written in your book before one of them came to be”¹²⁶; *golem* can be translate roughly as 'unformed body', suggesting an idea of something living,

¹¹⁷ “Dioè ou\ r|çédion dielei%on poétera proétera tw%on moriéwn, o£sa a!llou e£neka, h! ou/ e£neka tau%ota”. *G.A.*, 2,6, 742a.

¹¹⁸ “Kaiè diaè tou%to prw%oton meèn toè e!con thèn a\rchèn giénetai moérian, ei&t’ e\coémenon toè a!nw kuétov. Dioè taè periè thèn kefalhèn kaiè taè olmmata meégista kat’arçaèv faiénetai toi%v e\mbruéoiw, taè deè kaétw tou% o\mfalou%, oi/on taè kw%la mikraé”. *G.A.*, 2,6 742b.

¹¹⁹ In *Garbh.Up.* Prajapati, the demiurge who had created Universe and material world.

¹²⁰ “*tukāle sa\prayogād ekarātroṣita\ kalala\ bhavati saptarātroṣita\ budbuda\ bhavati ardhmāsābhyantare \ pi\do bhavati māsābhyantare ka\hino bhavati māsadyena śiraḥ sa\padyate māsātrayena pādapradeśo bhavati*”. *Sa\prayogād*: “perfect union”; *kalala*: “infinitesimal part”; *budbuda*: “roundness”; *pi\do*: “spherical mass”; *ka\hino*: “compact structure”; *śiraḥ*: “head”; *pādapradeśo*: “feet”.

¹²¹ “[...] oi/on ei! tiv §\ou% w\mou% toè e!xw lepuérion perieéloi, e\n deè t§% e!ndon u\meéni toè e!ndon u\groèn diafaiénoito: o\ troépov meèn tiv h&n toiou%tov a\$liv ei\pei%on: h&n deè kaiè e\ruqroèn kaiè strogguélon: e\n deè t§% u\meéni e\faiénonto e\neou% %sai i&nev leukaiè kaiè paceéai, ei\lhmeénai suén i\cw%ri pacei% kaiè e\ruqr§%, kaiè a\mfí toèn u\meéna e!xwqen ai\maélwpev: kataè deè meéson tou% u\meénov a\pei%ce leptoén ti o\$ moi e\doékei ei&nai o\mfaloév, ka\keién§ thèn pnohèn kaiè ei!sw kaiè e!xw poiéi%sqai toè prw%oton: [...]”. *Nat.Inf.*, 13,3.

¹²² “Nam cum in uterum inquit mulieris genitale semen datum est, primis septem diebus conglobatur coagulaturque fitque ad capiendam figuram idoneum. Post deinde quarta hebdomade, quod eius virile secus futurum est, caput et spina, quae est in dorso, informatur. Septima autem fere hebdomade, id est nono et quadregesimo die, totus inquit homo in utero absolutur”. *Noctes Atticae*, III,10,7.

¹²³ “Verum semine semel intra formandi hominis monetam locato, hoc primum artifex natura molitur ut die septimo folliculum genuino circumdet umori ex membrana tam tenui qualis in ovo ab exteriori testa clauditur et intra se claudit liquorem”. *Somnium Scipionis*, I,6,63. For the original Hippocrates’ text see endnote n.16.

¹²⁴ “Straton vero Peripateticus et Diocles Carystius per septenos dies concepti corporis fabricam hac observatione dispensant, ut hebdomade secunda credant guttas sanguinis in superficie folliculi de quo diximus apparere, terzia demergi eas introrsum ad ipsum conceptionis humorem, quarta humorem ipsum coagulari ut quiddam velut inter carnem ac sanguinem liquida adhuc soliditate conveniat, quinta vero interdum fingi in ipsa substantia humoris humanam figuram, magnitudine quidem apis, sed ut in illa brevitate membra omnia et designata totius corporis liniamenta consistant”. *Somnium Scipionis*, I,6,65.

¹²⁵ “Read! In the name of the Father who had created! Who had created human being from a clot”. *Sura* 96th, 1-2.

¹²⁶ “*Golmi ra’u ’enèkha / we’al sifrekha kullam jikkatèvu / jamim juttzàru / welo’ echad bahem*”, *Psalm* 139,16.

of human being nevertheless. Similarly a passage by Jeremiah¹²⁷ and another one by Isaiah¹²⁸ seem to grant a *status* of person to the embryo. However, an extract in the Book of Exodus, which deals with crimes, claims that punishment is heavier in case of injury for the woman, but not in case of premature birth¹²⁹.

From 4th to 6th month

“In four months ankles, digestive system and hips (are formed), in five months the back and the vertebral column, in six months mouth, nose, eyes, ears”¹³⁰.

According to *Garbh.Up.*, during the fourth month a very important stage takes place: the foetus is provided with internal organs and bones; from this moment, the foetus can receive nourishment from its mother through the umbilical cord and it is able to move into the uterus.

Hippocrates does not provide exact time of each stage of development, but he draws up a list of each part¹³¹: “Bones hardens due to heat; so the foetus ramifies like a tree. The internal side and the external one become more articulated. The head is fixed on shoulders; arms and forearms on sides; legs are separated; tendons are connected with joints; nose and ears lean out of flesh and becomes punctured; eyes are filled with crystal liquid and gender is known. Internal organs becomes complete” and then the foetus starts breathing.

Special attention must be paid to growth of bones and tendons. In Archaic Greek there was not a specific word to define “living body”¹³², however a stock expression “gui%a kaiè meélh”¹³³, suggesting the union of tendons and limbs, is attested.

Recognized as fundamental parts of the human being, skin, flesh, bones and tendons are what God created first in a man according to Job¹³⁴. The anonymous Author of *Garbh.Up.* says that tendons are produced from fat and bones from tendons¹³⁵, and both develop themselves during the fifth month. According to Aristotle, tendons and bones are created from the same elements, that is spermatic and nutritional residual; that is why they do not develop in adulthood, instead nails and hair grow lifelong because they receive an external nourishment¹³⁶. Tendons and bones are deprived of moistness due to interior heat, and so they become strong and fire can not burn them, like clay¹³⁷.

One more detail: both in *Garbh.Up.* and in Aristotle, nails and hair are considered as impurities: “there are three kind of impurity”¹³⁸, “Nature makes flesh and the other sense organs with a better material, and with residual it makes bones, tendons, hair, nails, hooves and similar parts”¹³⁹; Hippocrates instead does not consider them as impurities, however he claims that nails and hair grow up at the same time¹⁴⁰.

¹²⁷ “Before I formed you in the womb I knew you, before you were born I set you apart: I appointed you as a prophet to the nations”. *Jeremiah*, 1,5.

¹²⁸ “Before I was born the Lord called me: from my mother's womb he has spoken my name”. *Isaiah* 49,1.

¹²⁹ “If men who are fighting hit a pregnant woman and she gives birth prematurely but there is no serious injury, the offender must be fined whatever the woman's husband demands and the court allows. But if there is serious injury, you are to take life for life, eye for eye, tooth for tooth, hand for hand, foot for foot, burn for burn, wound for wound, bruise for bruise”. *Exodus*, 21,22-25.

¹³⁰ “*atha cathurthe māse gulphaja haraka ipradeśā bhavanti | pañcame māse pṣavaśo bhavati | śaṣthe māse mukhanāsikākṣisrōtrā i bhavanti*”. *Gulpha-*: “ankles”; *ja hara-*: “digestive system”; *ka a-*: “hips”; *pṣava-*: “back”; *vaśo*: “vertebral column”; *mukha-*: “mouth”; *nāsikā-*: “nose”; *ākṣi-*: “eyes”; *śrōtrā-*: “ears”.

¹³¹ “Kaiè taè oṣteá sklhruénetai ulpoè th%v qeérmhv phgnuémena: kaiè dhè kaiè diozou%tai w|v deéndron: kaiè a|rqrou%tai almeiron kaiè taè ei|sw tou% swématov kaiè taè e|lxw: kaiè hē te kefalhè giénetai a|feshkui%a a|poè toi%on w|moín, kaiè oi| braciéonev kaiè oi| phéceiv a|poè tw%on pleureéwn: kaiè taè skeélea diiéstatai a|p' a|llhélwn: kaiè taè neu%ra e|pai^ssetai a|mfie taèv fuésiv tw%on a|rqrwv kaiè a|taè stomou%tai: kaiè h| r|jèv kaiè taè ou|lata a|fiéstatai e|n t+%si sarxiè kaiè tetrhénetai: kaiè oi| o|fqlmoie e|mpiéplantai ulgrou% kaqarou%: kaiè toè ai|doi%on dh%lon giénetai o|koétoéon e|sti: kaiè taè splaégcna diarqrou%tai: [...]”. *Nat.Inf.*, 17,2-3.

¹³² In fact, the homeric word sw%ma suggests the dead body, the cadaver.

¹³³ For the explanation of this stock expression see Snell (1948).

¹³⁴ “Did you not pour me out like milk / and curdle me like cheese, / clothe me with skin and flesh / and knit me together with bones and tendons?”. *Job*, 10, 10-11.

¹³⁵ “*medasah snāyavaḥ snāyubhyo 'stīni*”. *medo*: “fat”; *snāyavaḥ*: “tendons”; *asthi*: “bone”.

¹³⁶ “Toèn au|toèn deè troépon toi%v o|stoi%v kaiè taè neu%ra suniéstatai kaiè e|k tw%n au|tw%n, e|k th%v spermatikh%v perittwésewv kaiè th%v qreptikh%v. !Onucev deè kaiè triéce v kaiè o|plaiè kaiè keérata kaiè r|jégch kaiè taè plh%ktra tw%on o|rniéqwn, kaiè ei| ti toiou%ton e|téroén e|sti moéiron, e|k th%v e|pikthétou trofh%v kaiè th%v au|xhtikh%v, hēn te paraè tou% qhéleov e|pikta%tai kaiè th%v quéraqen. Diaè tou%to taè meèn o|sta% meécri tinoè v lambaénei thèn au|xhsi”. *G.A.*, 2,6, 744b-745a.

¹³⁷ “|Upoè deè th%v e|ntoè v qermoéthtov taè te neu%ra kaiè taè o|sta% giénetai, xhrainomeénhv th%v ulgroéthtov. Dioè kaiè a|lutaè e|sti taè o|sta% ulpoè tou% puroév, kaqaéper keéramov”. *G.A.*, 2,6, 743a.

¹³⁸ “*trimala*”; *tri-*: “three”; *mala-*: “impurity”.

¹³⁹ “Ou|ftwv e|n toi%v ginomeénoiv au|toi%v h| fuésiv e|k meèn th%v kaqarwtaéthv u|llhv saérkav kaiè tw%on a|llwn ai|sqhthriéwn taè swémata suniésthsin, e|k deè tw%on perittwmaétnwv o|sta% kaiè neu%ra kaiè triécav, e|ti

From 7th to 10th months, pregnancy duration and birth

As far as the last stages of gestation are concerned, *Garbh.Up.* affirms that in seven months the foetus becomes a human being, it is viable and can survive in case of premature birth; during the eight month the foetus has *in nuce* its characteristics and features, and at ninth month it is born completely provided with sense organs and cognitive ability, it remembers the previous life and knows good *karma* from evil *karma*¹⁴¹. Also Aristotle declares that the foetus is not able to live before the seventh month; if it is born during the seventh months, it is possible that some parts like ears and nostrils are not completely formed, but they can develop after birth and the baby can live nevertheless¹⁴².

Common experience teaches that the normal duration of pregnancy is 38 weeks, that corresponds to nine months and a half. Obviously the ancient texts confirm this situation, some in implicit way (like *Garbh.Up.*, see further), some in explicit one, like Aristotle: “Pregnancy lasts seven, eight, nine months, usually ten months; for some women it lasts until eleventh month”¹⁴³. Macrobius, more interested in numerology than in medicine, says that Nature has fixed the term for birth at nine months, but in some cases, due to a mathematical calculation, it can be anticipated at seventh¹⁴⁴. Instead Censorinus displays a Chaldean theory which explains that men can be born only at seventh, ninth or tenth month because of the position of the stars and the Sun¹⁴⁵.

Normally the foetus, in the initial stages, has the head at the top of the uterus, then during the last weeks of gestation, it turns itself until it puts the head at the bottom of the uterus, and it is born from the head; this natural fact is confirmed by Aristotle¹⁴⁶, nevertheless Hippocrates seems to doubt about it¹⁴⁷.

The moment of birth is considered from foetus’ point of view both in Hippocrates’ text and in *Garbh.Up.*: “But the foetus, who was in a condition of happiness, arrived to uterus’ opening, with its mind oppressed by a mechanic grip, unhappy, new-born, touched by Visnu’s wind, does not remember previous births and deaths and does not know good *karma* from evil *karma*”¹⁴⁸. Hippocrates asserts the foetus, having no enough nourishment from its mother during the tenth month¹⁴⁹, breaks with hands and legs one of membranes in which is surrounded and then is able to be born (*Nat.Inf.*, 30,1).

Instead Aristotle presents birth from mother’s point of view. He focuses on the pain the woman feels: “if the pain is very hard and concentrated on the womb, birth will be faster; if it is concentrated on ankles, birth will be painful; if it is concentrated on the bottom of the womb, birth will be fast” (*H.A.* 7,9,586b).

d’ o!nucav kaiè o!plaèv kaiè paènta taè toiau%ta: dioè teuletai%a tau%ta lambaènei thèn suéstasin, o!ftan h!dh giènetai perièttwma th%v fuésewv”. *G.A.*, 2,6,744b.

¹⁴⁰ “£Ama deè toi%sin o!nuxi kaiè ai| triècev e\n t+% kefal+% r|izou%ntai [...]”. *Nat.Inf.*, 20,1.

¹⁴¹ “*saptame māse jīvena sa□ yukto bhavati / aṣ□ ame māse sarvasa□ pūr□ o bhavati [...] atha navame māsi sarvalakṣa□ a□ pūrno bhavati pūrvajāti□ smarati k□ tak□ ta□ ca karma vibhāti śubhāśubha□ ca karma vindati*”. *Saptame*: “seven”; *jīvena*: “life”; *aṣ□ ame*: “eight”; *sarvasa□ pūr□ o*: “full of features”; *navame*: “nine”; *sarvalakṣa□ a□ pūrno*: “full of features and provided with sense organs”; *pūrvajāti□*: “previous life”.

¹⁴² “£Osa meè ou&n giènetai proètera tw%on e|ptaè mhnw%on, ou\deèn ou\dam+% duèntai zh%v: taè d' e|ptaémhna goénima giènetai prw%ton, a\sqenh% deè taè pollaè (dioè kaiè spargaou%sin e|rièioiv au\taé), pollaè deè kaiè tw%on poérwn e|nièouv e|conta a\sçiéstouv, oi/on wltwn kaiè mukthérwn: a|ll' e|pauxanomeénoiv diarqrou%tai, kaiè biou%si pollaè kaiè tw%on toiouétwn”. *H.A.*, 7,4, 584b.

¹⁴³ “[...] kaiè gaèr e|ptaémhna kaiè o|ktaémhna kaiè e|nneaémhna giènetai, kaiè dekaémhna toè plei%ston”. *H.A.*, 7,4, 584a.

¹⁴⁴ “*Humano partui frequentiorem usum novem mensium certo numerorum modulamine natura constituit, sed ratio sub adsenti senarii numeri multiplicatione procedens etiam septem menses compulit usurpari*”. *Somnium Scipionis*, I,6,14.

¹⁴⁵ “*Sed nunc Chaldaeorum ratio breviter tractanda est, explicandumque cur septimo mense et nono et decimo tantummodo posse homines nasci arbitrentur [...] Itaque eum (Sun), qui stellas ipsas quibus movemur permovet, animam nobis dare qua regamur potentissimumque in nos esse moderarique, quando post conceptionem veniamus in lucem*”. *De Die Natali*, VIII, 1-3.

¹⁴⁶ “£Ecei d o!moiéwv paènta taè zṣ%a thèn kefalhèn a!nw toè prw%ton: au\xamoémèna deè kaiè proèv thèn e!xodon o!rmw%nta kaétw periaégetai, kaiè h| geènesiév e\stin h| kataè fuésin e|piè kefalhèn”. *H.A.*, 7,8,586b. See also *On Gen.*, 4,9,777a.

¹⁴⁷ “*Toè deè paidièon e\n t+%si mhétr+sin e|oèn twè ce%re e!cei proèv t+%si geénusi kaiè thèn kefalhèn plhsión toi%on podoi%n: kaiè ou\k e!stin a\trekeié+ kri%nai, ou\d h!n i!d+v e\n t+%si mhétr+si toè paidièon, poétera thèn kefalhèn a!nw e!cei h! kaétw: e\k deè tou% o!mfalou% tetameénoi e|sièn oi| ulmeénev, a\nteécontev au\toé*”. *Nat.Inf.*, 28,1.

¹⁴⁸ “*atha januḥ ranpriyo niṣata□ yonidvāri sa□ prāpto yantra□ āpiḍyamāno mahatā duḥkhena jātamātrāstu vaiṣ□ avena vāyunā sa□ sp□ s□ as tadā na smarati janmamara□ ā□ na ca karma śubhāśubha□*”.

¹⁴⁹ “*Ou!tw deè kaiè toè paidièon, o!koétan au\!xhq+% , ou\k e!ti duèntai h| mhétr trofhèn pareécein a|rkeéousan: zhteéon ou&n pleiév trofhèn th%v pareouéshv toè e!mbruon a!škariézon r|hégnsi touév ulmeénav, kaiè luqèèn tou% desmou% cwei% o!mou% e!xw: kaiè tau%ta giènetai e\n deéka mhsìè toè makroétaton*”. *Nat.Inf.*, 30,9.

Twins, malformations, sterility

In short, few words about some marginal aspects. According to *Garbh.Up.*, twins are generated from the separation of man's semen in two parts by the action of (sacred) wind¹⁵⁰. Similarly Hippocrates affirms that twins are generated from one fertilization only¹⁵¹; when man's semen comes into the uterus, it divides itself in two parts, and each of these is surrounded by one membrane¹⁵². If the semen into one part only is strong, embryo becomes male; if it is weak, it becomes female; if the strong semen comes into both parts, there will be two males, if the weak one comes into both, there will be females¹⁵³. Aristotle specifies the maximum number of twins is five; in one special case only, a woman generated twenty newborns in four pregnancies, five each time; he affirms also that for the human beings (unlike others animals) few twins survive if they are male and female twins (*H.A.* 7,4,584b).

As regards of malformations, Aristotle says they are caused by an excessive lack of movement of spermatic residual¹⁵⁴; similarly *Garbh.Up.*'s Author affirms the cause of blindness, limp, hump and dwarfism is excessive quantity of *tamas*¹⁵⁵. Hippocrates contemplates only cripples: "if foetus is a cripple into the uterus, I say that is the product of a contusion, due to a mother's blow or fall or some kind of violence; [...] or foetus can be a cripple for another reason: if uterus' space is too small for the complete articulation, body moves backwards and foetus becomes a cripple inside the uterus"¹⁵⁶.

In conclusion, sterility is due to equality of male and female semen in *Garbh.Up.*, instead in Deuteronomy it is caused by a divine punishment¹⁵⁷.

Conclusions

Despite the differences carried by the classical texts - especially about the gender issue, the first weeks' development and each part's formation - there is a substantial agreement among the authors about the main questions of the embryo's growth: both male and female's semen are involved in its formation; in the beginning it has a nearly round shape; the fetus is viable from the seventh month and it may be born from that time until the tenth month of gestation. Most of all, a common feature between Indo-European and Semitic culture is the idea of human life's beginning connected with a round form (see endnotes n.15, 20 and 21): the embryo is considered like a clot or a lump, something already potentially viable, as the Biblical God talks to it in its mother's womb (endnotes n.22 and 23). However, unlike Greek and Latin tradition, an accurate description of the stages of embryo and foetus' prenatal life seems generally to lack in the Semitic texts.

¹⁵⁰ "anyonyavāyuparipīḍitaśukradvaividhyāt tanuḥ syāt tato yugmāḥ prajāyante". *Yugmāḥ*: "twins".

¹⁵¹ "Diéduma deè giénetai meèn a\l' e\lnoèv lagneuématov: [...]". *Nat.Inf.*, 31,1.

¹⁵² "[...] £Otan deè h\ gonhè tuéc+ scisquei%sa e\l duéo koélpouv a\fikomeénh kaiè a\l mh%traí deéxwntai thèn gonhèn kaiè toi%n koélpoin mhdeéterov e\l toèn e\fteron calaés+, cwrisquei%sa dhè e\l n e\l kateér% koélp% ulmenou%tai kaiè zwou%tai t% au\l t% troép% §/per kaiè toè e\fn e\l retai". *Nat.Inf.*, 31,1.

¹⁵³ "[...] \Ev o\koéteron d' a\l n tw%on koélpwn tuéc+ h\ gonhè pacuteérh kaiè i\scuroteérh e\l selqou%sa, kei&q\ a\l rsen giénetai: e\l v o\koéteron d' a\l n u\lgroteérh kaiè a\l sqensterhè, kei&q\ qh%lu giénetai: h\ n d' e\l v a\l mfw i\scurhè e\l seélq+, a\l mfw a\l rseña giénetai: h\ n deè a\l sqenhév, a\l mfw qhélea giénetai [...]". *Nat.Inf.*, 31,3.

¹⁵⁴ "Ka\q' ofson d' a\l n e\l leiép+ h\ u\l perbaéll+, h\ ce\l ron a\l potelei% h\ a\l naéphron toè ginoémenon [...]". *On Gen.*, 2,6,743a.

¹⁵⁵ "vyākūlitamanaso 'ndhāḥ khañjāḥ kubjā vāmanā bhavanti". *Andhāḥ*: "blind"; *khañjāḥ*: "limp"; *kubjā*: "hump"; *vāmanā*: "dwarf". *Tamas*, "passive power", is one of the three nature's elements with *rajas* (passionate power) and *sattva* (rational power).

¹⁵⁶ "Toè deè phrwqèen e\l n t+%si mhétr+si paidíon fhmiè au\toè h\ flasqèen phrwqh%nai th%v mhtroèv plhgeièshv kataè toè e\l mbrun h\ pesouèshv h\ a\l llou tinoèv biaiéou paqhématov prov genomeénou t+% mhtrié:[...] h\ e\l teér% troép% toi% de phrou%tai paidièa, e\l phèn e\l n t+%si mhétr+si kataè toè cwrièon ka\q' of ti kaiè h\ rqrwèqh stenoèn +&, a\l naégkh e\l n sten% kineumeénou tou% swématov phrou%sqai kat' e\l kei%no toè cwrièon: [...]". *On Gen.*, 10,1-2.

¹⁵⁷ "And he will love thee, and bless thee, and multiply thee: he will also bless the fruit of thy womb, and the fruit of thy land, thy corn, and thy wine, and thine oil, the increase of thy kine, and the flocks of thy sheep, in the land which he sware unto thy fathers to give thee. Thou shalt be blessed above all people: there shall not be male or female barren among you, or among your cattle". *Deuteronomy*, 7,13-14.

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