

Slotcommuniqué algemene vergadering Pauselijke Academie voor het Leven: “The human embryo in the pre-implantation phase”

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On the occasion of its 12th General Assembly, the Pontifical Academy for Life celebrated an international Congress on the theme: “The human embryo in the pre-implantation phase: Scientific aspects and bioethical considerations”. At the conclusion of the Congress, the Academy offered to the Ecclesial Community and to the general public, certain considerations on the theme of its reflection.

1. It can escape no one that the contemporary bioethical debate, especially in recent years, has focused mainly on the reality of the human embryo, considered in itself or in relation to how other human beings behave towards it. This is only natural since the multiple implications (scientific, philosophical, ethical, religious, legislative, financial, ideological, etc.) connected to these areas inevitably catalyze different interests, as well as attract the attention of those in search of authentic ethical action.

The need to ask the basic question: “Who or what is the human embryo”, has therefore become unavoidable, in order to draw from a relevant, consistent answer to it criteria for action that fully respect the integral truth of the embryo itself.

To this end, in accordance with a correct bioethical methodology, it is necessary first of all to look at the data that the most up-to-date knowledge puts at our disposal today, enabling us to know in great detail about the different processes through which a new human being begins its existence. These data must then be subjected to an anthropological interpretation in order to highlight their significance and the emerging values to which to refer in the last place, to derive the moral norms for practical action and standard procedures.

Human life begins at conception

2. Consequently, in light of the most recent discoveries of embryology, it is possible to establish certain universally recognized points:

a) The moment the sperm penetrates the oocyte is when the existence of a new “human being” begins. Fertilization induces a whole series of consecutive events and transforms the egg cell into a “zygote”. In the human species, the nucleus of the spermatozoid (contained in the head) and a centriole (which will play a determining role in the formation of the mitotic fucus in the act of the first cellular division) enter the oocyte; the plasmatic membrane remains on the outside. The male nucleus undergoes profound biochemical and structural changes that depend on the ovular cytoplasm in preparation for the role that the male genome will immediately begin to play. Here we are witnessing the decondensation of the chromatin (induced by factors synthesized in the final phases of oogenesis) that makes transcription of the paternal genes possible.

After the sperm penetrates the oocyte, it completes its second meiotic division and expels the second polar body, reducing its genome to a haploid number of chromosomes in order to associate with the chromosomes brought by the male nucleus the karyotype characteristic of the species. At the same time, it encounters an “activation” from the metabolic viewpoint, with a view to the first mitosis.

It is always the cytoplasmic environment of the oocyte that induces the centriole of the spermatozoon to duplicate itself, thereby constituting the centrosome of the zygote. This centrosome duplicates itself with a view

to constituting the microtubule that will make up the mitotic fusus.

The two sets of chromosomes find the mitotic fusus already formed and arrange themselves at the equator in a position of metaphase. The other phases of mitosis follow, and finally the cytoplasm divides and the zygote gives life to the first two blastomeres.

The activation of the embryonic genome is probably a gradual process. In the single-cell human embryo seven genes are already active; others are expressed during the passage from the zygote stage to that of two cells.

b) Biology, and more particularly embryology, provides the documentation of a definite direction of development: this means that the process is “oriented” — in time — to the direction of a progressive differentiation and acquisition of complexity and cannot regress from the stages it has already completed.

c) A further point acquired with the earliest phases of development is the “autonomy” of the new being in the process of the auto-duplication of genetic material.

d) The characteristics of “gradualness” (the time needed for the passage from a less differentiated stage to a more differentiated stage) and of the “coordination” of development (the existence of mechanisms that regulate the developmental process in a unitary whole) are also strictly linked to the property of “continuity”.

These properties — virtually ignored at the beginning of the bioethical debate — are considered more and more important in recent times because of the successive discoveries that research offers on the dynamic of embryonic development also at the “morula” stage, which precedes the formation of blastocytes.

All together, these trends already form the basis for interpreting the zygote as being a primordial “organism” (monocellular organism) that consistently expresses its potentials for development through a continuous integration, first, among the various internal components and then, among the cells to which it progressively gives rise. Their integration is both morphological and biochemical. The research that has been underway for several years now only yields further “proofs” of this reality.

3. These breakthroughs of modern embryology must be submitted to the scrutiny of philosophical and anthropological interpretation in order to understand the precious value inherent in and expressed by every human being, also at the embryonic stage. Thus, the basic question of the moral status of the embryo must be faced squarely.

It is well-known that, among the different hermeneutical proposals present in the current bioethical debate, various moments in the embryonic development of the human being have been indicated to which a moral status can be attributed to the embryo, and claims are put forward based on “extrinsic” criteria (that is, starting with factors external to the embryo itself).

However, this approach has not proved suitable for truly identifying the moral status of the embryo, since any possible judgment ends by being based on factors that are wholly conventional and arbitrary.

To be able to formulate a more objective opinion on the reality of the human embryo and therefore to deduce ethical indications from it, it is necessary instead to take into consideration criteria that are “intrinsic” to the embryo itself, starting precisely with the data that scientific knowledge puts at our disposal.

Is the embryo already a person?

It can be concluded from this data that the human embryo in the phase of pre-implantation is already: a) a being of the human species; b) an individual being; c) a being that possesses in itself the finality to develop as a human person together with the intrinsic capacity to achieve such development.

From all this may one conclude that the human embryo in the pre-implantation stage is really already a “person”? It is obvious that since this is a philosophical interpretation, the answer to this question cannot be of a “definite kind”, but must remain open, in any case, to further considerations.

Yet, on the precise basis of the available biological data, we maintain that there is no significant reason to deny that the embryo is already a person in this phase.

Of course, this presupposes an interpretation of the concept of the person of a substantial type, referring, that is, to human nature itself as such, rich in potential that will be expressed during the embryo’s development and also after birth. To support this position, it should be noted that the theory of immediate animation, applied to every human being who comes into existence, is shown to be fully consistent with his biological reality (in addition to being in “substantial” continuity with the thought of Tradition).

The Psalm states: “For you did form my inward parts, you did knit me together in my mother’s womb. I praise you, for you are fearful and wonderful. Wonderful are your works! You know me right well” (Ps 139[138]:13-14), referring to God’s direct intervention in the creation of every new human being’s soul.

From the moral viewpoint, moreover, over and above any consideration of the human embryo’s personality, the mere fact of being in the presence of a human being (and even the doubt of this would suffice) would demand full respect for the embryo’s integrity and dignity: any conduct that might in some way constitute a threat or an offence to its fundamental rights, and first and foremost the right to life, must be considered as seriously immoral.

To conclude, we would like to make our own the words that the Holy Father Benedict XVI spoke in his Address to our Congress: “God’s love does not differentiate between the newly conceived infant still in his or her mother’s womb and the child or young person, or the adult and the elderly person. God does not distinguish between them because he sees an impression of his own image and likeness (Gn 1:26) in each one.

“He makes no distinctions because he perceives in all of them a reflection of the face of his Only-begotten Son, whom ‘he chose... before the foundation of the world.... He pre-destined us in love to be his sons... according to the purpose of his will’ (Eph 1:4-6)” (Address, 27 February 2006; L’Osservatore Romano English edition, 8 March, p. 7).