

{Part IV of IV includes Section IV: Replies to Objections that depend on Science and Theology; the General Conclusion; and Bibliography}

## Part IV: Replies to Objections

### Section IV: *Equo ne credite*

“The highest principles for our aspirations and judgments are given to us in the Jewish-Christian religious tradition... Science can only be created by those who are thoroughly imbued with the aspiration towards truth and understanding. This source of feeling, however, springs from the sphere of religion. To this there also belongs the faith in the possibility that the regulations valid for the world of existence are rational, that is, comprehensible to reason. I cannot conceive of a genuine scientist without that profound faith. The situation may be expressed by an image: Science without religion is lame, religion without science is blind.”

Albert Einstein, 1950

#### Philosophised Pseudo-Scientific Objections

The objections put forth to diminish or negate the moral value, right to life or humanity of the early embryo with recourse to science-related reasoning need to be examined, as do associated errors in theology. It is evident that even though a multitude of webs of reasoning are spun to justify possession of personhood, potential, individuatedness, ensouledness, animatedness, hominisedness, or even being “truly” human, once it is concluded that there is a lack of these qualities, the expressions synonymise into the deprivation of the claim to humanity, the ineligibility to be respected, and the denial of life. There is a myriad of objections each a mixture of a set of common if imprecisely defined factors. Therefore, representative and generally encompassing objections taken from a single article will be quoted rather than attempting to articulate every permutation. Arguments related to higher consciousness, self-actualisation, empathy and psychological maturity that some bioethicists and philosophers deem necessary to qualify as a person are not addressed since they are more relevant in dehumanising the later embryo and foetus, the sick and the senile, and the focus here is on the earliest times of our lives.

#### **Objection 1:** On fertilisation, delayed “hominisation” and “developing eggs”

“Advances in science and a better understanding of embryology have led... researchers to again re-visit theories of a more delayed hominization. Among these factors are the fact that fertilization is a process rather than a single event”, “the time at which the egg begins its further development”. “In deference to Church teaching that ‘a person exists’ from ‘the moment of conception’ one could understand ‘moment’ metaphorically as referring to the process as a whole.”

**Reply 1.1:** Distinction is needed between the process of fertilisation and the moment of generation of the new human being. We are generated in sexual reproduction during the process of fertilisation, at the stage within the process when there is fusion of gametes that give rise to the primordial embryo. The fact, that many phenomena occur during gametogenesis, gamete maturation, fertilisation and in embryogeny, is not contradictory to the embryo coming into being at a discrete point, that it did not exist before then, and that it proceeds ontogenically from then, and that it would die if you killed it.

Reply 1.2: Hominisation, a word adopted into bioethics for the purpose of proposing its delay, is irrelevant since the newly generated human being is a man, a human being, and he cannot become what he is after a delay. Likewise, clubbing ensoulment and personhood into the status of hominisation, he cannot receive a soul after a delay because a human being by definition cannot be without a soul, and if there is no soul then there is no human being either who originated within this process of fertilisation.

Reply 1.3: The “egg” does not begin its further development, because there is no egg. The gametes, including the secondary oocyte cease to exist when the embryo originates, and it is the embryo that lives and develops in his or her amazing and rationally autonomous way.

Reply 1.4: “Egg” is not even used in human embryology. The maternal gamete is referred to as an oocyte and the oocyte undergoes significant transitions during its existence and each stage has a specific descriptive name. Egg is useful only to dehumanise the embryo by referring to it as an egg.

Reply 1.5: The “moment of conception” to be deferred to is the moment of origination of the human being, and it need not always be within the process of fertilisation as happens naturally with monozygotic twinning and unnaturally in embryo engineering.

Reply 1.6: The term “conception” needs to be qualified with what it purports to conceive, or else as Fr Ford did, it may be manipulated to mean the conception of a “person” or “individual” or a “rational-souled human” or other entities whose definitions may not coincide with that of our actual beginning.

#### **Objection 2** On embryonic engineering and failure of magisterial definitions

“Formation of a new and unique genotype... the Church has traditionally identified as the marker indicating the creation of a new human person” “However, these statements of the Church are ambiguous at best if not meaningless when applied to cloning.” “The most obvious approach would be to discard the thesis that a truly human person exists at fertilization... A later stage of development such as implantation, which is the time favored by many researchers and theologians, would serve as a more scientifically acceptable marker to designate the beginning of a new individual.”

Reply 2.1: Formation of a new genotype was traditionally an occurrence when the generation of a human being occurred in a traditional manner. The actuality was that along with the unique genotype there was generated a new and unique human being. Embryologists, not the general voting public, law-givers, theologians or philosophers, need to objectively discern when a human being is generated not only naturally but also in consideration of the many techniques of embryo engineering at unicellular and multicellular stages, inclusive of and in addition to cloning, and the Church needs to confirm that all these embryos, once distinguished as being so, are to be respected for the human beings that they are.

Reply 2.2: The facts, that in fertilisation the embryo begins life as a primordial embryo, in pronuclear transplantation as a pronuclear embryo having killed two other pronuclear embryos to obtain their pronuclei, in nuclear transfer cloning in a form similar to a syngamic embryo, perhaps as super-morula or blastocysts in certain types of embryonic engineering and even at more advanced stages in some types of natural twinning, only confirm the need to know when the beginning is, and not to shift the beginning of those who have already begun.

Reply 2.3: One needs to be wary of expressions such as the beginning of an “individual” since sophistry enables definition of individual distinct from the living growing human being and speaks of the “conception of individuals” as occurring long after mother conceived her child.

Reply 2.4: Clearly the unique genotype was not a prerequisite but rather a characteristic because attempts to dehumanise those who may share a genotype would dehumanise monozygotic twins who are natural and more identical clones, whose moral status is not presently questioned.

Reply 2.5: It is perhaps relevant to note that with the *fiat*, the Word became Flesh – not two weeks later, and bioethicists may propose that the feast on the 8<sup>th</sup> is December gets postponed nearer to Christmas.

Reply 2.6: The assertion, that since nuclear transfer clones do not begin life within the process of fertilisation, those who do originate in a fertilisation process should be reassigned, together with the clones, to an arbitrary common beginning at implantation, is startling. Let us consider the story of Hildegard and Julian. Hildegard set off from County Kerry and Julian started on her e-bike from Cornwall. Hildegard remembers waving to her mum in Kerry, but Julian has only a glazed memory of the Cornish countryside. If Hildegard and Julian are sane, would they accept it if a philosopher they met Greece told them that priests and scientists have decided that since Julian did not start off from Ireland, Hildegard could not have departed from Ireland either (rather to Hildegard’s surprise), and that it needs to be concluded that both of them having gained muscle and lost fat during the exertions of their pilgrimage, actually started at the geographical marker of Normandy, and that if they were knocked over by a truck before they had got to France, it didn’t matter because such collisions were sanctioned by law? Perhaps then, it is the philosopher who is insane. Epilogue: Julian does not reach Haifa on account of ill health.

**Objection 3:** On “pre-embryo” who is not a person

“There, the two haploid nuclei (one from the sperm and one from the egg), in a process known as syngamy, fuse into a diploid nucleus within the now fertilized egg, or *zygote*. The result is a *pre-embryo* that is a unique entity, the product of both the male and female parents.”

Reply 3.1: “Pre-embryo” suggests that the subject is at a stage prior to being an embryo and is presently not an embryo. Pre-embryo categorises the early embryo into what it is not, after which it may be inferred that it is not a person, nor a human being, nor “hominised”, nor “ensouled”.

Reply 3.2: “Pre-embryo” is used by scientists, bioethicists and regulators only in the case of human embryos, and it appears to be exclusively applied to those whose asouledness or lack of personhood needs to be demonstrated.

Reply 3.3: Embryologists are clear on what clinicians and legislators may wish to obscure. The Carnegie Embryological Collection which is considered the Bureau of Standards for early human development does not entertain the creative nomenclature invented by fish biologists and broadcasted with the casuistry of dissenting Catholic moral theologians and their followers, and it forms the basis of the international *Terminologia Embryologica*, which does not contain the term “pre-embryo” either, apart from dismissing it in an endnote that notes its use in clinical and legal contexts - indicating that the International Federation of Associations of Anatomists have not yet gone woke. Carnegie Stage 1 is the unicellular embryo that contains its own genetic material and is an individually specific cell. Stage 1a is the primordial embryo and is the beginning of embryonic life and ontogenetic development.

Reply 3.4: The embryo prior to implantation may be referred to as the pre-implantation embryo, while bearing in mind that implantation is itself a process that takes place over several days during the embryo's continuous growth and development. Likewise, prior to gastrulation, he may be called a pre-gastrulation embryo, and we are pre-pubertal prior to attainment of the milestone of puberty.

**Objective 4:** On the confused and disorganised disposition of the embryo early in life

"By the sixth or seventh day the blastocyst stage is attained and uterine implantation begins. Soon thereafter, true cell differentiation occurs and development into the embryo proper ensues."

Reply 4.1: Mammalian development is flexible and largely autonomous in that it does not depend on specific morphogenetic instructions from outside such as the uterus or *in vitro* environment. Inherent information for development of order along consequently formed body axes are believed to be enabled by asymmetry in the zygote being transmitted to cleavage and blastocyst stages by segregation and modulated by associated cell-cell interactions. The embryo right from its origin is a self-organising informationally complete system capable of all morphogenetic progress independent of external information.

Reply 4.2: Our blastomeres undergo visually evident asymmetric cell division starting from the 8-cell stage on our second day producing polar inner and non-polar outer cells that differentiate into the inner cell mass and the trophoblast layer on day 4 when the morula transforms into the blastocyst with the secretion of blastocoel. Further differentiation and specialisation take place continuously thereafter.

Reply 4.3: Even before we exit the *capsula pellucida* on day 5, the inner cell mass begins transition into epiblast. At the time of the onset of implantation on day 6, trophoblast differentiation has begun. As for "true" differentiation that begins thereafter, one would need to presume the existence of false differentiation or untrue differentiation which is perhaps not found in cytology, which could describe the differentiation that has happened up to then.

Reply 4.4: Even if it is assumed that our major structure is entirely derived from what formed as a bilaminar disc or from cells that differentiate into epiblasts, it would still be incorrect to state that these arise after implantation begins because the dermal layer of epiblast and hypoblast had already formed when we were a blastocyst.

**Objection 5:** On classical philosophers, the Fathers, Popes and Catechisms, and their competence in embryology

"The Catechism of the Council of Trent, first published in 1566, clearly teach delayed hominization": "in the natural order, no body can be informed by a human soul except after the prescribed space of time"

Reply 5.1: The exercise of the Extraordinary Magisterium in an Ecumenical Council will produce an infallible dogma when solemnly defined and promulgated as divinely revealed, and this does not apply to every statement or clause in a sentence of a council document. Further the scope is limited to matters of faith and morals, not biology. Likewise, the catechism of Pius V even though it is not a conciliar document excellently teaches faith and morals, but the great St Charles did not know what we know about our early days. The catechism of Trent also made grand statements regarding stellar and planetary substance and trajectories that astroethicists may latch on to.

Reply 5.2: Since Christ in His human nature is “like us in all respects except for sin”, then if He was conceived with a soul, then so were we.

Reply 5.3: Since the Blessed Virgin Mary, according to the infallible *Ineffabilis Deus* “was preserved free from all stain of original sin” “in the first instant of her conception” then she too had her soul when she was conceived and since we share her humanity, so did we.

Reply 5.4: The teaching of the Church is clear regarding human nature and the rejection of dualism, whether one refers to the Council of Ephesus, or Vienne, the teaching of Pope Gregory the Great, *Donum Vitae* – “The human being is to be respected and treated as a person from the moment of conception”, or the encyclical *Evangelium Vitae*. Further, the catechism of Vatican II does not reflect the biological lapse in its predecessor.

Reply 5.5: It is worthwhile noting the nine months between the feast of the Immaculate Conception and the birth of the Queen, and between the feast of the Incarnation and Christmas, by which the Church signifies to simple men the implausibility of ensoulment delays.

Reply 5.6: *Exodus* 21: 22-23 is also abused in mistranslation to suggest that the unborn child had no value, but what is translated as “miscarriage” in many versions derive from an original Hebrew-Ugaritic word meaning to “come forth” which is used to suggest premature birth in this context.

Reply 5.7: The various understandings of the Fathers and classical philosophers throughout the centuries are worthy of reflection as is the fact that they were not all scientists and even if they were, they did not possess present embryological knowledge which would have led them to different conclusions in addition to awe of the marvel of early human ontogeny that continue to fascinate and overwhelm today’s embryologists as they advance their knowledge into how marvelous we are in the marvelous creation we subsist in – even during our youngest and tiniest moments.

Reply 5.8: Just that the ancients made mistakes, it is of doubtful purpose to regurgitate them repeatedly and propagate the same mistakes. It would be better instead to take what was wise and good and true in their lives and works.

**Objection 6:** On the “ontological individual” and the lack of personhood and diminished moral status of the ordinary individual

“McCormick states ‘the moral status—and specifically the controversial issue of personhood—is related to the attainment of developmental individuality (being the source of one individual).’ “It is relevant to note that at any stage prior to the completion of implantation the pre-embryo is capable of dividing into multiple entities. This ability of an individual cell or a group of cells to develop independently is known as totipotency.” “At or shortly after implantation has occurred, the pre-embryo loses this totipotency through a process known as restriction” “and the individual embryo will no longer be able to split into twins. As such, for the first time the embryo truly exists as an individual entity.”

Reply 6.1: The embryo truly exists as an individual from the time he began to exist as an individual which was when he was generated. This is regardless of whether he originated sexually in natural or *in vitro* circumstances, or whether he was engineered into existence by cloning or otherwise.

Reply 6.2: The embryo does not lose moral status by being the source of another individual. Having a twin does not make us a non-person, nor the possession of the ability to have a twin. McCormick's logic by extension would suggest that parents lose their dignity in having children, and the more children the parents have, the more indignified they would be. If life is a good, then one gains stature if at all, in having generated offspring, and not *vice versa*.

Reply 6.3: If we may be killed at a time of life when we could have had a twin, it could arguably be worse than being aborted afterwards since not only do we die but the twin's opportunity for originating is also denied.

Reply 6.4: The completion of embedding and of implantation are not the milestones past which it is often said that twinning may not occur but rather the consequent onset of gastrulation indicated by the appearance of the primitive streak. Depending on the individual embryo, the appearance of the primitive streak may or may not occur on their 14<sup>th</sup> day. The elder twin is an individual generated earlier, and the younger twin is generated by asexual reproduction later. Once the younger is generated, he is an individual. Individuation is an abstract construct of no relevance either to the humanity or value of the individuals concerned, before or after their gastrulations.

Reply 6.5: A somatic cell and an oocyte can be taken from a person at any time of life and used to produce a nuclear transfer clone. That is, the donors have become the source of another individual, the cloned embryo that begins development. Therefore, in consideration of the individuation logic, we are never individuated suggesting that no one is a person, because anyone can be cloned. It follows that not only the new clone but also the donor who is also the clone of his clone is now found to be desouled by individuationist logic and may be used in experiments.

Reply 6.6: The ability to develop independently is not what totipotency is. Totipotency is the ability of a cell to produce the entire and eventually fertile organism, although less stringent definitions are also considered since the transition to pluripotency, multipotency and unipotency are not distinct nor always irreversible. It is perhaps the greatest feat of nature that a single cell is able to activate an orchestrated developmental program that culminates in a complete multicellular organism. Generation of a totipotent embryo involves chromatin reorganisation and epigenetic reprogramming *via* DNA methylations and histone modification. However, after the first lineage differentiation into the trophoblasts and the pluripotent inner cell mass, we cannot be said to possess totipotent cells.

It is incorrect to say that cells are totipotent until the end of implantation because totipotency is lost during the cleavage phase, and indeed differentiation and development preference begins in the unicellular stage. It is also incorrect to say that twinning cannot occur after cell lineage restrictions occur since it is not exclusively related to totipotency of blastomeres, and natural formation of twins may occur not only in the pre-gastrulation phase but even in the gastrular phase at or after the onset of gastrulation. Embryological error and ambiguity are prevalent among bioethicists, and perhaps need to be.

Reply 6.7: Totipotentiality of early blastomeres does not imply they are separate individuals when they remain an integral part of a whole embryo, even though when extracted they could begin or be induced into independent existence as a new asexually generated human being - in that after separation during the early cleavage period, a blastomere could become a new self-organised teleological whole.

Every cell contains the complete genome but the extent of gene expression diminishes as cells specialise, and this cell differentiation corresponds to its developmental restriction. Possession of a complete genome is also why terminally differentiated somatic cells can be programmed, limited by previous epigenetic signatures to become pluripotent, and blood cells can be converted to liver cells. Blastomeres at the two-cell or 4-cell stage could be totipotent, enabled by plasticity with which a cell's developmental preference toward a certain cell lineage might be reversible depending on cellular environment.

Reply 6.8: It is thought that the low cloning efficiency, abnormal embryo phenotype, and low viability of clones generated by somatic cell nuclear transfer procedures are due to incomplete reprogramming of donor nuclei and this failure attributed to genetic imprinting suggests that the donor nuclear is not entirely totipotent.

Reply 6.9: One reason the abstract individuation *mantra* survives even in scientific literature is that the end of implantation of the embryo and the consequent onset of gastrulation which approximately coincides with the regulatory 14 days after which twinning is said not to take place, are preceded by the onset of neurulation which indicates the beginning of the central nervous system development and the consequent emergence of sentient capability and the associated potential for perceiving pain which is believed by some to confer personhood, whether the organism was loved by God or not, and whether or not a soul plays a role. However, the law is now being challenged by those who wish to experiment on older embryos, and if endorsed by law makers, we would have a new limit of perhaps 28 days and then the individuation theory may finally pass into history having served its purpose.

Reply 6.12: One mechanism through which conjoined twins may arise is when two primitive streaks are formed or the primitive node is duplicated. This suggests that twinning may occur after the onset of gastrulation, thereby negating the theory that we are "individuated" by the end of implantation, or by the onset of gastrulation and so the individuatists will need a new biological marker prior to which we remain unsouled, and countless publications that fuel individuation by repeating this logic *ad nauseum* may need to be revised.

Reply 6.10: Individuation does not appear relevant to the embryos when he is being surgically or chemically aborted at any time, but only when used in research and clinical practices. It would however primarily be McCormickally unindividuated embryos that are destroyed using pills, injections and intra-uterine devices that chemically or physically prevent implantation and are claimed to be contraceptive.

Reply 6.11: Even if the 14-day limit, the individuation concept, the completion of implantation, the appearance of the primitive streak or the inability to twin were all retracted to give way to some other criterion for the beginning of personhood, that novelty still would not be valid since that would be just one more milestone in our ontogenical continuum and it would not draw in a soul any more than the onset of neurulation, the first beat of our heart, sentience, potential viability *ex utero*, passage to the outer world, the onset of puberty or the award of a doctorate.

**Objection 7:** On singleness bequeathing personhood and a unique and distinct genetic identity

"Another finding of modern embryology that has inclined some theologians towards theories of delayed hominization has to do with the singleness of the pre-embryo and individuation." "...the fact that the "singleness" of the pre-embryo is not established until well after fertilization and how this relates to individuation."

Reply 7.1: The singleness requirement implies that monozygotic twins, whether generated naturally or *via* embryo splitting *in vitro*, are arguably semi-individual and a semi-person and triplets a third so, or not persons at all since they certainly are de-singled and genetically indistinct since they have genomes in common, even if it was argued that they qualified for souls according to the individuation criterion after initiating their primitive streaks. Likewise with engineered cloning, the clone and the nuclear donor both lose their singleness, but perhaps to a lesser extent since mitochondrial DNA is inherited from the oocyte donor by the younger clone.

Reply 7.2: We may also have a mixture of genotypes, and therefore may not only lack a unique genotype, but also lack possession of a single genotype in that we may have several, thus overturning backwards the singleness requirement and possessing “manyness”.

This occurs in those who receive bone marrow or organ transplants as well in mosaicism where in a single zygote lineage somatic mutations or disjunctions lead to more than one genotypically distinct cell population. There exists double phenotype when a twin dies *in utero* and is resorbed partially by the other twin, with embryo fusion at earlier stages, and also among fraternal twins who may have exchanged cells *in utero*. Most beautiful of all, some of our cells remain with our mother and may be found propagating in her tissues and hers likewise in ours. This is so even in the case of her children who were not born – even those she never knew she was pregnant with.

Those generated *via* procedures associated with IVF may be outcomes of the fusion of zygotes and in embryo engineering blastomeres from separately generated embryos are aggregated to form a single embryo. Further, pluripotent “stem” cells from other embryos destroyed in their harvesting, epigenetically reprogrammed induced pluripotent cells or even more differentiated stem cells can be aggregated and induced to start development as an embryo, or pluripotent cells may be added to existing blastocysts. Such embryos are formed of cells of different origin and possessing various genomes. By extension of the logic of depreciative singleness where lacking uniqueness is dehumanising, those who are chimeric or microchimeric would be describable as possessing multiple or eminent personhood, be superhominised and deservable of royal respect.

**Objection 8:** On foetal or so-called “extra-embryonic” membranes and their distinction from the so-called “embryo proper” being relevant for dehumanisation

“It is at implantation that cell differentiation has advanced to the stage where the cells that will continue to develop into the embryo proper are distinct from those that will develop into the placenta and fetal membranes.”

Reply 8.1: The *adnexa developmentalia* or the embryonic and foetal membranes which include the trophoblast, amnion, chorion, umbilical vesicle, allantoic vesicle, placenta and umbilical cord are structures that we form, and they are part of us for as long as we need them and keep them. Those that appear during the embryonic period may be called embryonic membranes during the first 56 days or so until we graduate beyond Carnegie Stage 23, and they or their developmental successors will continue to be called foetal membranes during consequent foetogenesis.

Reply 8.2: “Embryo proper” is a misleading term since in the situation and the stage in our life being described, all cell types whether subservient or major that have arisen from the embryo is properly the



embryo. All our cells and the tissues and organs they form extend from the zygotic cell, and this remains so even when our major structure develops into a form recognisable as having substantial correspondence to the adult. Cyema and adnexa are terms that are acceptable in distinguishing descriptively if not cytogenically between the eventual major structure of the embryo from the adjacent or subservient ones.

Reply 8.3: It is incorrect that the *adnexa* are distinct from the eventual major structure of the embryo since part of the umbilical vesicle forms the primordium of our gut, and the allantois forms the urachus that appears in the foetal stage and develops into the median umbilical ligament in the adult.

Reply 8.4: It is worth noting also that later “extra-embryonic” mesoblast and “intra-embryonic” mesoblast may both be derived from epiblast, and that cell differentiation and gene expression is influenced by the cell’s physical environment and its responsivity to chemical signaling factors, with exchange of cells being observed even between inner and outer cells in the later morula and early blastocyst phase.

Reply 8.5: Furthermore, while the hypoblast in humans may be derived from epiblast and their combined bi-layer often called an “embryonic” disc to suggest that the rest of the embryo is “extra-embryonic”, the hypoblast contributes to formation of the umbilical vesicle considered to be “extra-embryonic”.

Reply 8.6: The assertion that producing or possessing membranes, cells and tissue which serve a purpose but may later be discarded make us non-persons until we continue our life with the part of our body that no longer gives rise to such membranes, would mean that the female would not exclusively be a woman proper until she has attained menopause.

Reply 8.7: Rather than constituting a point for soul or personhood denial, it would be worthwhile appreciating how a single cell is able autonomously and elegantly to rapidly grow and to gain functional and morphological complexity with teleological insight. Indeed it should be spell-binding that the amazing embryo right from his origin prepares himself *via* suitable cell line differentiations for his future logistical and developmental requirements and sets up his accommodation in the amnion, his source of nourishment with the trophoblasts merging into mothers decidua, and establishes sanitation through inter blood system exchanges while slowly building up the parts that specialise into structures that he would need in later life after discarding at birth what was useful for the special first nine months spent intimately with mum. That some of our initially differentiated cell lines serve their purpose and are then dispensed with is sufficient cause for our lack of dignity until other cell lines from the same source have differentiated to an arbitrarily sufficient level to form tissue that are retained at birth, is an untenable proposition, since in a natural situation we cannot get to birth without the service of our adnexa.

Reply 8.8: The bioethicist logic can extend further to snakes, frogs and salamanders that do not become snakes, frogs and salamanders proper until they cease moulting, and lizards proper do not exist as long as they are capable of autotomy. Or perhaps to serpentine ethicists, the snake becomes more proper each time it emerges from its membranes, larger and with new skin.

Reply 8.9: It could be argued that we never become us proper until we lose our milk teeth or as long as we can form and shed scar tissue, pimples and blisters – and perhaps with some convincing, even as long as we can donate blood, bone marrow, skin grafts and kidneys.

**Objection 9:** On the degree of development being associated with degree of humanity or personhood, or the strength of a right, if any, to life.

"James... Diamond claims that in light of the biological evidence, "hominization" cannot possibly be said to occur before 14 to 22 days after conception." "...the change in life form that takes place... is a radical and categorical one."

Reply 9.1: The "life form" does not determine our nature, and changes and development do not make us more human or more hominised. We exist in the form that is natural for a given age or point in our development. A higher degree of development does not obtain for us a higher personhood, and an imbecile has a soul as does a professor, not that today there is always a distinction between the two.

Reply 9.2: The uninitiated might believe on seeing a seven-year-old girl beside a seventeen-year-old that they are two species rather than the same at different degrees of development and apparent life forms, but one does not accord greater intrinsic value to the teenager. Likewise the embryo undergoing neurulation may be less developed than the poet entranced by the moonlight, but death will come to the poet if he is killed as much as to the embryo.

Reply 9.3: As Diamond allegedly sees the changes at 14 or 22 days as being radical and categorical as far embryo research is concerned, the Diamonds of elective abortion may see radical changes at 12 or 22 weeks or 9 months as being radical and proponents of infanticide may find categories that coincide with the 5<sup>th</sup> birthday.

Reply 9.4: A more radical transformation in the life of the butterfly does not require reinventing butterfly larvae as pre-larvae or pre-caterpillars, and the pupa is not depapilionidised just that the butterfly - or perhaps according to pierine-ethicists the butterfly proper, first forms and then discards its chrysalis and eventually emerges from that womb. Embryonic metamorphosis from morula to blastula or gastrula is perhaps less dramatic, if more semantic.

#### **Objection 10:** On "ensoulment"

"There is the ongoing question of when ensoulment occurs."

Reply 10.1: Ensoulment in the sense of a spiritual immortal soul granted by God to man, only matters to those who believe in God, and that God made man in His own image to love Him in an ecstatic communion for eternity. It follows that if we exist, then we have a soul, and if we have a soul we had it from the time we began to exist, and we began to exist when we were generated - the majority of humanity having been generated during a fertilisation process, and some others in other ways. If then we had souls since our origination, ensoulment is an invalid concept and the timing of delayed ensoulment is a meaningless question since we don't delay in becoming human being after we come into being as a human being.

Reply 10.2: The question of ensoulment and hominisation contains within it and reveals the ongoing acceptance of duality since it assumes that only after the embryonic body grows and develops up to a particular stage in his life, during which time he lives without a soul or separated from a soul, that he eventually qualifies to receive it.

#### **Objective 11:** On bodies and dualism

"A soul cannot exist without a body, and by extension, a pre-embryo cannot be ensouled until it is a body. This presents a problem for Church teaching since certainly a fertilized zygote, or an egg with a transferred nucleus, is not a body either in scientific or philosophical terms. The question must then be asked, 'how can a soul be embodied if there is no body?' "

Reply 11.1: The question is invalid since the body of the embryo is the embryo's body. When we are a single cell, that cell is our body - and when we are a morula that ball of cells is our body, when we a blastula we are body with a cavity, as we implant we develop more cavities in our body, and thereafter are able to transfer nutrients and waste between our body and our mother's body. We may be a bi- or tri-laminar disc surrounded by membranes or we may be multi-organ disc with four appendages dangling from it and a hairy cranial node, but whatever our form as suited to our stage of life, there is no question of not having a body.

Reply 11.2: If we didn't have a body when we were an embryo, the question would be on what the experiments are conducted on, and what get destroyed, cryo-preserved or incinerated afterwards. The bioethicists would also need to assert that "in scientific terms" bacteria, archea, protozoa and even some algae and fungi have no bodies.

### **Objection 12:** On recombination and soul fusion for delayed ensouling

"If one accepts the metaphysical notion of the soul as an indestructible, indivisible entity, and if a single pre-embryo possesses a soul, then what happens if that pre-embryo splits into two entities—or if two pre-embryos recombine into one? Since souls cannot be split or fuse, then as long as the cells remain in their totipotent state and twinning or recombination is possible, ensoulment cannot take place.

Reply 12.1: In the case of spontaneous twinning or in engineered embryo splitting or blastomere separation, from one embryo more are generated, and when a new embryo is generated that embryo will have his soul, and the elder will not lose his. The question of soul-splitting is a false one because the twin when his ontogeny is initiated, will have his own soul by virtue of his origination as a new human being.

Reply 12.2: In a multi-gestational pregnancy, when a twin dies his tissues are resorbed by the other twin and the mother. Two embryos may also fuse into one at early stages especially in laboratory environments. Fusion of embryos and partial resorption of a diseased embryo by the sibling leads to the idea of fusion of souls. The question of soul fusion is invalid since one twin ceases to live or has died in these instances, and the other has and always did have his own soul.

### Conclusion

*"Magnificat anima mea Dominum;  
Et exultavit spiritus meus in Deo salutari meo"*

The God of Love is the God of both Theology and Science and He is the Divine Lawgiver who transcends Philosophy, and there need be no fear in pursuing the truth through a myriad of complexity. One cannot resign as a victim of philosophical and biological sophistry that exalts the unnatural generation, experimental or commercial manipulation and destruction of multitudinous members of our family during their earliest times, when the growth in scientific knowledge aided by advances in technology and techniques that reveal and awe, make resoundingly clear the truth about our beginning and development and quash and dispel the deceptive yet impressive lies that abound and which are used deliberately or passively to propagate the culture of death.

Personhood is a dead letter considering that a child is deprived of it when trees, rivers, apes and computers have it granted them, and a philosopher's or parliamentarian's definition of it should

determine whether another should die. Ensoulment is not relevant because man is a unified totality of body and soul. A living man cannot hominise when *ipso facto* he is a man, irrespective of his size, age, relative location, potential or realised capabilities, degree of morphological or psycho-mental development, the stage at which he is within a given process or any other bioethical or temporal marker.

The wonder and truth about the early human being needs to be discovered and shared, and the sophistry and semantics used to dehumanise, depersonalise, devalue and indignify needs to be exposed in order that embryo creation for research, therapy, or reproductive purposes and their subsequent abuse and destruction may be recognised for what it is, even if in some cases the intentions for pursuing such activities are not wholly dishonourable. The humanity of the embryo in his pre-gastrulation phase is also relevant in challenging the accepted, legalised and prevalent practice of destroying them using abortifacient birth control drugs and devices, incorrectly clubbed as contraceptives. Most medico-surgical abortions are committed on us in the post-gastrulation embryonic phase and in our foetal period, and becoming convinced of our humanity before that age can help to dispel the inclination towards our destruction at ages when limbs need to be torn off and skulls crushed even though some of the philosophical and bioethical arguments justifying these practices will principally be the same if shifted in degree.

A human being should not be violated *etsi Deus non daretur*, but even if there were no God, if I were that tiny helpless human being, it would be me who is manipulated and destroyed. Whether at a given time you are called zygote, morula, blastula, gastrula, neurula, embryo, foetus, infant, toddler, kid, tween, teen, youth, adult or geriatric, it would still be you, and it wouldn't depend on whether you were generated naturally in chaste marital love, artificially in a lab or by any other means, nor if you had a genome in common with your clone. Further accepting who a human being is, conceding that he is one of us and accepting his intrinsic worth may also be useful when personhood, hominity and even our soul may be taken away from us by the authorities due to disease, disaster, senility or perceived end of usefulness.

One needs to question why in terms of therapeutic research there is such impetus to move from mouse to man, even though much that cannot be learnt murinally could be learnt from chimpanzees and bonobos, and why human embryonic "stem" cells are keenly desired when induced pluripotent cells suffice, and while adult stem cell research is neglected. With infertility, the question is abeg why the millions of children around the world who need parents are ignored in the impetus to create children unnaturally.

The tree of knowledge was forbidden, but the tempter promised that eating of the fruit would make you like God. There may be a temptation to be god instead of God, to make men, to give and take life at will, to be omnipotent at least over embryos - intellectually or practically. Wittgenstein may have compared a meeting of philosophers in Cambridge to an outbreak of the bubonic plague, and their enduring power is evident in the laws, practices and public opinion of today. It is crucial that bioethicists of today harness their power in the pursuit of truth so that at least the legislators and scientists of tomorrow may believe in and do what conforms to the beautiful truth about the origin, dignity and destiny of every human being. Original sin is real, but let us deny the inclination towards the fig, strive towards the olive, and seek the intercession of the great and powerful Quis ut Deus to build up a culture of life.

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{ End of Part IV of IV, and end of the series on Bioethicists and the Embryo }

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