

A FURTHER POSTSCRIPT TO MARK JOHNSON

THOMAS A. SHANNON

[Editor's Note: The author summarizes in his postscript to the preceding note the underlying differences of presuppositions and methodological assumptions that explain the variances in his and Johnson's understanding of delayed hominization. His contribution concludes here for now the extended exchange on this topic between these two Catholic ethicists.]

The exchanges between Mark Johnson and me can be characterized, I think, as analogous to the debate about whether a glass is half empty or half full. Johnson focuses on preimplantation as "an organized body of heterogeneous parts, influencing, and influenced by, each other, which works to preserve its existence and enhance its ability to interact with its environment."¹ All things being equal, this is correct and what happens in the normal course of embryonic development. My perspective is that all things are not always equal (as he himself notes in the case of cloning). Given both the biological possibility of twinning and the laboratory possibilities following in vitro fertilization, we need to rethink what moral claims we make about the early embryo. Part of our disagreements stems, I think, from our different perspectives: his focusing on normal embryogenesis and my focusing on the exceptions. However, I also make the further claim that the fact of the exceptions qualifies some of the moral claims made even during normal embryogenesis.

Let me begin by acknowledging that Johnson is correct in noting that I mistakenly attribute totipotency to the preimplantation embryo as a whole. His comment that this capacity is predicated only of the cells and not the whole organism is correct. But, having said that, even though the preimplantation embryo is an organized entity with a teleology built into its genetic program, the fact of the "regulative development" that he highlights also has important moral implications. Because of the totipotentiality of the cells during this early process of development, they are able to compensate for an error in another cell or to provide DNA for a missing cell, as he correctly notes. This is an important datum because it shows that in the normal process of em-

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¹ See Mark Johnson's immediately preceding "Delayed Hominization: A Rejoinder to Thomas Shannon" 708-14, at 714.

bryogenesis, the developing preimplantation embryo is not yet individualized. If it were, its constituent cells could not compensate for each other in the development process. My point is this: until the restriction process is completed as a normal part of embryogenesis, the cells are not committed to becoming particular parts of the body. We have cells in a process of becoming individualized but not yet individualized. Until they are individualized through the restriction process, the preimplantation embryo is not an individual because it is not yet indivisible. The individual cells can compensate for or take the place of each other, or as Johnson notes "these cells have the root ability to fulfill any other cellular functions in the embryo of which they are a part."² After restriction, the cells can no longer perform this function. They are committed to be what they are in the body. This entity is genuinely indivisible for if one divides it, one gets parts, whereas before, if it were divided biologically through twinning or artificially through embryo division, one would have the potential for complete organisms.

Of moral significance to me in the normal process of embryogenesis is that the preimplantation embryo—though living, possessing the human genome, probably having a unique genotype, having organization and a teleology—nonetheless is in a rather fluid state correctly described by Johnson as regulative development. It is not individualized and it cannot be a person because a necessary, though not sufficient, condition of personhood is being an individual. This state can be described negatively as the inability to be divided (the literal meaning) or positively defined through the addition of a positive element such as Scotus's concept of *haecceitas*. Whichever way one goes, one cannot deny regulative development and the lack of individuality that accompanies it and therefore one cannot claim as Johnson does that it is "an organism like us,"³ since we cannot do this.

Or can we? In his concluding footnote Johnson discusses the cloning of Dolly. The single most important element in that experiment was the fact that the DNA in the nucleus of a fully differentiated adult mammalian cell was turned on again so that, when implanted into an enucleated cell, it became a whole other organism. Thus the restriction process was reversed. Because each of our cells contains all the genetic information needed to replicate our bodies, a genetically identical twin was made. Johnson suggests that this may cause problems for me, but I think not. What the cloning experiment does is to confirm that the genetic profile we inherit from our parents is genuinely our human nature. The fertilized egg contains the information necessary to replicate another human being, but until the process of regulative development is over and the cells become restricted, what we have is human nature in the process of becoming individuated. Again individuation is

² Ibid. 711.

³ Ibid. 714.

critical since this is what differentiates the preimplantation embryo from the embryo.

Until Dolly, we had assumed that this DNA could not be turned on again. And this is the stunning reality of Dolly: what we thought to be irreversible (restriction) is reversible, and a genetic twin can be produced from a fully differentiated cell. Unlike biological twinning, this occurs only artificially or externally in the laboratory. Yet it is a genuine capacity for our genetic constitution. Morally this reinforces the significance of individuality, for what cloning does is replicate our genetic code which leads to the development of an individual—but that individual is not me, just as traditional genetically identical twins are not the same person. Thus while the negative definition of individuality remains important either in the normal biological process of development or in cloning experiments because this is the first necessary but not sufficient set to personhood, we need to emphasize now the positive definition of individuality. *Haeccitas* has never looked so good.