

## ON OVARIAN TISSUE TRANSPLANTATION AND THE METAPHYSICS OF SELF-RECOGNITION: A RESPONSE TO PAUL LAURITZEN AND ANDREA VICINI

NICANOR PIER GIORGIO AUSTRIACO, O.P.

*To resolve questions regarding ovarian tissue transplantation, the author proposes a metaphysical theory positing that the common ensoulment shared by all the cells in a woman's body is manifested primarily in her immune system's ability to distinguish her own cells from those of another. The author therefore suggests that human procreation, to be morally licit, has to involve the giving of one's gametes, defined, not by their genetic constitution, but by their being part of the immunologically defined self given in the mutual self-gift that is conjugal love.*

IN AN ESSAY RECENTLY PUBLISHED IN THIS JOURNAL, Paul Lauritzen and Andrea Vicini (hereafter L&V) propose that state-of-the-art medical advances involving fertility preservation for cancer patients, especially ovarian tissue transplantation (OTT), challenge the boundaries of moral reflection within the Catholic tradition.<sup>1</sup> Specifically, they ask whether documented scenarios involving the heterologous transplantation of ovarian tissue from one identical twin to her sister, or the transplantation of ovarian tissue from nonidentical sisters, both followed by natural conception, reveal a tension at the heart of the Catholic Church's opposition to heterologous procreation: "Is this opposition rooted in the tradition's nondualistic view of the body and a natural law understanding of the necessary integration of

NICANOR PIER GIORGIO AUSTRIACO, O.P., received his PhD in biology from the Massachusetts Institute of Technology and is completing his STD in moral theology at the University of Fribourg. Currently associate professor of biology and instructor of theology at Providence College, Rhode Island, he specializes in the molecular genetics of programmed cell death, Catholic bioethics, and the dialogue between science and religion. He has recently published *Beatitude and Biomedicine: An Introduction to Catholic Bioethics* (2011), as well as scientific research papers in *FEMS Yeast Research* and *PLoS ONE*, and bioethics articles in the *National Catholic Bioethics Quarterly* and the *Thomist*. In theology, he is writing his dissertation on the hylomorphic structure of Thomistic moral theology in light of systems biology; and in biology, he is uncovering the molecular mechanisms behind programmed cell death in model eukaryotes.

<sup>1</sup> Paul Lauritzen and Andrea Vicini, S.J., "Oncofertility and the Boundaries of Moral Reflection," *Theological Studies* 72 (2011) 116–30.

marriage, sex, and procreation? Or . . . is it rooted in a theological understanding of marriage and procreation that makes genetic connection essential?"<sup>2</sup>

I respond to L&V by proposing that the tension they perceive within the Catholic moral tradition can be easily resolved by clearly articulating the metaphysical link between a person's identity and her genetic constitution. I begin by clarifying the truth that for the Catholic tradition, a person's identity—what constitutes self rather than nonself—is specified not by her genes but by her soul informing her matter. Thus, metaphysically speaking, a woman's organs and cells, including her eggs, are hers not because they are genetically identical to each other—though in most cases they are—but because they are animated by her soul. Next, I propose a metaphysical theory that posits that this common ensoulment shared by all the cells in a woman's body is manifested in several biological realities, most importantly in her immune system's ability to distinguish her own cells from those of another. Thus, I propose that human procreation, as understood within the Catholic moral tradition, if it is to be morally licit, has to involve the giving of one's gametes, defined not by their genetic constitution, but by their being part of the immunologically defined self that is given in the mutual self-gift that is conjugal love.

### A METAPHYSICAL THEORY TO EXPLAIN IDENTITY AND SELF-RECOGNITION

For the Catholic tradition, the human being is best described as an embodied soul, where the soul is the form of the body:

The unity of soul and body is so profound that one has to consider the soul to be the 'form' of the body: i.e., it is because of its spiritual soul that the body made of matter becomes a living, human body; spirit and matter, in man, are not two natures united, but rather their union forms a single nature.<sup>3</sup>

As I have argued elsewhere, this account of the human being that posits that she is composed of form and matter—a metaphysical theory called "hylomorphism"—remains a coherent and compelling philosophical solution to the challenge of describing the human organism as a dynamic yet stable being, especially when it is rearticulated using the insights of system biology.<sup>4</sup> Thus, any discussion of the moral dimensions of ovarian OTT within the Catholic tradition has to begin with this philosophical anthropology.

<sup>2</sup> Ibid. 125.

<sup>3</sup> *Catechism of the Catholic Church* (Washington: US Catholic Conference, 1994) no. 365.

<sup>4</sup> For details, see my articles: "On Static Eggs and Dynamic Embryos: A Systems Perspective" *National Catholic Bioethics Quarterly* 2 (2002) 659–83; and "Immediate Hominization from the Systems Perspective," *National Catholic Bioethics Quarterly* 24 (2004) 719–38. For other recent defenses of the coherence and

How then would hylomorphism explain the difference between self and nonself? As the form of the body, the soul is the cause of its unity, its integrity, and its nature. It explains why a human body is a single, unified organism, rather than a diverse, random collection of carbon, hydrogen, oxygen, and nitrogen molecules. It also explains why a human body is a human body rather than a gorilla body. Thus, from the perspective of hylomorphism, a person's identity—what constitutes self rather than nonself—is specified not by one's genes but by one's soul informing one's particular matter.

As a formal cause of the body's unity and integrity, the human soul informs every part of an individual's body. In fact, metaphysically speaking, a part of an individual's body is a part of her body rather than a part of another person's body precisely because it is informed by her soul and not by that other person's soul. Thus, a woman's heart is hers because it is animated by her soul, and her ovaries are hers because they too are animated by her soul. In other words, metaphysically speaking, one's cells, tissues, and organs are specified as self rather than as nonself by one's soul informing one's matter.

This metaphysical reality that explains the difference between self and nonself, I propose, is manifested in several biological realities that are empirically verifiable, including physical continuity and, often, genetic identity. How could it not be, given that the one reality that is the human individual is ontologically one substance and biologically one organism at the same time? More specifically, I propose that this metaphysical reality is manifested most clearly in the biological reality that a woman's body—her immune system in particular—is able to distinguish self from nonself.

In other words, I propose that the best metaphysical explanation for why the cells of a woman's immune system are able to recognize that all the other cells of her body are self rather than nonself is that they are all animated by her soul. Thus, the immune cells do not reject these self-same cells as alien. Furthermore, I propose that the most robust *metaphysical* explanation for why a woman's immune system rejects the cells within a donated organ is that they are not animated by the same soul. Not surprisingly, therefore, an organ recipient's body has to be immunologically suppressed so that it does not reject the donated organ. Significantly, though this medical intervention allows the patient's body to use the donated organ, metaphysically speaking, that donated organ never becomes part of the self. It always remains other. Therefore, I propose that from the perspective of hylomorphic theory, the best metaphysical explanation for organ rejection in

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explanatory power of hylomorphic theory, see David Oderberg, "Hylomorphic Dualism," *Social Philosophy and Policy* 22 (2005) 70–99; and John Haldane, "A Return to Form in the Philosophy of Mind," *Ratio* 11 (1998) 253–77.

the recipient is that the donated organ is never informed by the organ recipient's soul.<sup>5</sup>

One hallmark of a successful theory, whether it be a scientific or a metaphysical theory, is its ability to explain a diverse range of phenomena. The assumption is that the theory with the most explanatory power is often the one closest to the truth of the matter.<sup>6</sup> How then would hylomorphism explain those immunological futuristic scenarios where scientists are able to “trick” the immune system by molecularly manipulating the donated organ in such a way that it is now recognized as self rather than nonself by the recipient's immune system? The best metaphysical explanation, I propose, is that the biological manipulation has altered the matter of the donated organ in such a way that it is now apt to be animated by the recipient's soul. Recall that according to hylomorphic theory, a substance is a composite of matter and form, where the matter is apt to receive that form. This should not be a surprising explanation. The human body routinely does this—alter the aptness of matter for animation by its own soul—when it assimilates nutrients that were once parts of other plants or animals and as such were once animated by other souls.<sup>7</sup>

<sup>5</sup> As I have proposed elsewhere, transplanted human organs, like the human cells growing in a laboratory petri dish taken from a long-deceased individual, are animated by a subrational human soul that differs not only from the soul of the original organ or cell donor, but also from the soul of the immuno-suppressed organ recipient. For further discussion, see my “The Moral Case for ANT-Derived Pluripotent Stem Cell Lines,” *National Catholic Bioethical Quarterly* 6 (2006) 517–57. In light of this analysis, how should we respond to the cardiac transplant patient who is surprised that he can never say, “I love you with all my heart,” since his donated heart is not truly his own? After meeting numerous transplant recipients as a hospital chaplain in New York City, I have discovered that many, if not all, of them are acutely aware that their donated hearts are never truly theirs. It was and always remains a gift from the donor. Thus, I do not think that they would be surprised at the metaphysical explanation outlined here. In fact, they would be the first to acknowledge that they can love now only because of the love of another who had given the heart to them.

<sup>6</sup> For a classic exposition and defense of this claim in the philosophy of science, see Peter Lipton, *Inference to the Best Explanation*, 2nd ed. (New York: Routledge, 2004).

<sup>7</sup> Appealing to metaphysical alterations in the matter that is part of the matter/soul composite that is the human organism can also be used to account for cases of autoimmune disease. Metaphysically speaking, the matter of the cells being attacked by the immune system has been altered in such a way that it is now apt for ensoulment by a subrational soul. Again, this should not be a surprising explanation. Metaphysically speaking, changes in the aptness of a human being's matter, such that it is now apt for ensoulment with a subrational soul, occurs during the dying process that culminates in death when the soul separates from the matter, which is now not apt for it. I cite these examples only to show that the explanatory power of the metaphysical theory described here can be extended to other scenarios that I cannot discuss here.

In sum, I suggest that the metaphysical account described here is viable and coherent; and in my opinion it is also the most robust explanation for the biological realities uncovered by immunologists. It is a metaphysical theory for self-recognition that emerges from the philosophical anthropology presupposed by the Catholic tradition. As such, it can be used to address other philosophical and moral quandaries that arise within that tradition.

### THE METAPHYSICS OF SELF-RECOGNITION AND THE INDIVIDUAL'S GENETIC CONSTITUTION

In most cases, all the cells in one's body—all the cells animated by one's soul—have a common genetic heritage because they are descended from the same human embryo. This includes one's gametes, his sperm or her eggs. Again, it is important to stress that they are part of that individual, not because they are genetically related, but because, metaphysically speaking, they are informed by that individual's soul.

However, there are scientifically documented cases where an individual's cells are *not* all genetically related. Take the 1998 case of Karen Keegan, a 52-year-old Boston teacher who needed a kidney transplant.<sup>8</sup> Genetic testing revealed that two of her three adult sons had DNA that did not match hers. Further genetic analyses revealed that Karen was a human chimera: her body and ovaries were made up of two distinct populations of cells with different genetic signatures. Presumably, the cells with the second set of DNA were derived from a distinct human embryo that had fused with Karen early in her embryonic development. However—and this is key—these cells were fully integrated into Karen's body. Biologically, they became her cells, and her body recognized them as such. They were not rejected by her immune system. Therefore, in line with the metaphysical theory I outlined above, I propose that these genetically distinct cells, early in Karen's embryonic development, became informed by her soul. They became her cells.

What these human chimeras reveal is that the link between one's identity and one's genetic constitution is not a necessary one. In most cases, a person's cells are genetically related to one other. However, this is not always the case. In some human chimeras, some of a person's cells may be genetically distinct. What is most important is that these cells, regardless of their genetic constitution, are recognized as self by the

<sup>8</sup> Neng Yu et al., "Disputed Maternity Leading to Identification of Tetragametic Chimerism," *New England Journal of Medicine* 346 (2002) 1545–52. For a review of human chimerism, see E. J. Yunis et al., "Chimerism and Tetragametic Chimerism in Humans: Implications in Autoimmunity, Allorecognition, and Tolerance," *Immunology Research* 38 (2007) 213–36.

individual's immune system. Again, metaphysically speaking, they are animated by one's soul.

In light of this biological and metaphysical analysis, I suggest that Karen's sons remain her sons even though their genes are not genetically related to those found in the majority of the cells in their mother's body. They are her sons because they can trace their origin to the fertilization of eggs that had developed and matured in Karen's body. Since these eggs were not immunologically rejected by her body, I propose that, metaphysically speaking, in light of the theory expounded above, we can infer that they were animated by Karen's soul. Thus, these eggs were Karen's eggs. Therefore, the children conceived with these eggs were her children.

### THE MORALITY OF HETEROLOGOUS OVARIAN TISSUE TRANSPLANTATION: PROCREATION OR GENETICS?

As L&V propose—correctly in my opinion—the morality of autologous OTT would probably be affirmed by the magisterium of the Catholic Church because this medical intervention respects both the dignity of the human embryo and the dignity of the conjugal act as the unique context for the transmission of human life.<sup>9</sup> Here, a woman's ovarian tissue taken prior to chemotherapy and kept frozen for a time would be returned to her body with the hope of restoring endocrine function and egg maturation after the completion of her treatment. She would then be able to conceive through sexual intercourse with her husband.

But what about the morality of *heterologous* OTT? Here, a cancer patient would receive the ovarian tissue donated by another woman after treatment, again, with the hope of restoring her ability to conceive a child. As L&V point out, this medical intervention is excluded by the Church's magisterium because, as the Charter for Health Care Workers explains, these organs ensure the procreative identity of the individual human person.<sup>10</sup> Along with one's brain, one's gonads are "organs which embody the characteristic uniqueness of the person, which medicine is bound to protect."<sup>11</sup>

In response, L&V wonder if this teaching reveals an interesting anomaly in the Catholic moral tradition. Once the cancer patient/ovarian tissue recipient begins to ovulate again, she would be able to conceive a child with her husband through sexual intercourse. Therefore, like autologous

<sup>9</sup> Lauritzen and Vicini, "Oncofertility" 120–22.

<sup>10</sup> Pontifical Council for Pastoral Assistance, Charter for Health Care Workers, no. 88, <http://www.ewtn.com/library/curia/pcpaheal.htm> (this and all other URLs herein cited were accessed January 10, 2012).

<sup>11</sup> *Ibid.*

OTT, L&V suggest that heterologous OTT appears to respect both the dignity of the human embryo and the dignity of the conjugal act as the unique context for the transmission of human life. But if this is so, they then ask: What precisely is the foundation of Catholic opposition to heterologous OTT specifically and heterologous procreation more generally? They speculate that,

the fact that it does not appear possible to root opposition to heterologous procreation in a nondualist account of human embodiment or a natural law conception of the relation of marriage, sex, and procreation suggests that it is somehow rooted in concerns about procreative identity understood in terms of genetic connection.<sup>12</sup>

But if this is so, L&V notice, then the argument appears to rely on a kind of genetic essentialism that the Catholic tradition has repudiated in other contexts, revealing a tension within the Catholic moral tradition itself.<sup>13</sup>

### RESOLVING THE TENSION: THE CONJUGAL ACT AS A TOTAL GIFT OF SELF

To resolve the perceived tension surrounding the Church's teaching on heterologous OTT, I suggest recalling that for the Catholic moral tradition, marriage constitutes a communion of persons, whose life-giving principle is conjugal love. This *communio personarum* is actualized when a man and a woman give themselves completely to each other:

When a man and woman in marriage mutually give and receive each other in the unity of 'one flesh,' the logic of the sincere gift of self becomes a part of their life. Without this, marriage would be empty; whereas a communion of persons, built on this logic, becomes a communion of parents.<sup>14</sup>

<sup>12</sup> Lauritzen and Vicini, "Oncofertility" 127.

<sup>13</sup> As L&W point out, Pope Benedict XVI has himself argued both that we must "avoid the risk of a widespread genetic reductionism which tends to identify the person exclusively in terms of genetic information and interactions with the environment," and that every human being "is far more than a unique combination of genetic information that is transmitted by his or her parents" (Address to the Members of the Pontifical Academy for Life on the Occasion of the 15th General Assembly [February 21, 2009], [http://www.vatican.va/holy\\_father/benedict\\_xvi/speeches/2009/february/documents/hf\\_ben-xvi\\_spe\\_20090221\\_accademia-vita\\_en.html](http://www.vatican.va/holy_father/benedict_xvi/speeches/2009/february/documents/hf_ben-xvi_spe_20090221_accademia-vita_en.html)).

<sup>14</sup> John Paul II, *Gratissimam sane*, "Letter to Families" no. 11 (1994), [http://www.vatican.va/holy\\_father/john\\_paul\\_ii/letters/documents/hf\\_jp-ii\\_let\\_02021994\\_families\\_en.html](http://www.vatican.va/holy_father/john_paul_ii/letters/documents/hf_jp-ii_let_02021994_families_en.html). On this see William E. May, "The Communion of Persons in Marriage and the Conjugal Act," ET, "La 'communio personarum' et l'atto coniugale," in *Morale coniugale e sacramento della penitenza: Riflessioni sul 'Vademecum per i Confessori'*, ed. Cardinal Alfonso Lopez Trujillo and Francisco Gil Hellin (Vatican City: Libreria Editrice Vaticana, 1998) 135–50, available at <http://www.christendom-awake.org/pages/may/communionofpersons.htm>.

Thus, marital intercourse, if it is to remain true to the nature and dignity of human persons, necessarily involves the mutual and total giving of self. By definition, this mutual and total giving of self can only occur between spouses during a conjugal act that is open to life: Sexual intercourse in any other context would not involve a total self-gift, because in each of these alternative scenarios, including contraceptive sex or extramarital sex, for example, one partner or both of them would be withholding some dimension of him- or herself from the other. Hence, for the Catholic moral tradition, there is the necessary and inseparable link between the unitive and procreative dimensions of the conjugal act.

Therefore, I suggest that for the Catholic moral tradition, what is most important is that in the conjugal act the human person gives his own gametes to his spouse as part of his total self-gift to his spouse. For the woman, in the conjugal act, this means that she gives her beloved the opportunity to fertilize her eggs. This is an integral dimension of a conjugal act that is open to the transmission of human life. As I noted above, in most cases, a woman's gametes are genetically related to the cells that make up the rest of her embodied self. However, this is not always the case: For Karen Keegan, some of her eggs were genetically unrelated to the majority of her other cells. Nonetheless, metaphysically speaking, these genetically dissimilar eggs were still hers because they were animated by her soul, a reality manifested biologically by the fact that these eggs were recognized as self by her immune system. Therefore, in her conjugal acts with her husband, Karen still gave her husband the opportunity to fertilize her gametes even though her eggs were genetically distinct from most cells in her body. Thus, these conjugal acts, if they were open to life, remained acts of total self-giving.

In light of this analysis, I suggest that heterologous OTT undermines the necessary and inseparable link between marriage, sex, and procreation, not because it involves the transmission of genetically unrelated gametes per se, but because it involves the woman's giving of another person's gametes to her spouse. Thus, in a conjugal act after a heterologous OTT, in what is supposed to be a total gift of self, a woman is giving to her beloved something that is not hers to give. This would contradict the very meaning of the conjugal act.

Finally, I would like to address the documented cases mentioned by L&V involving the heterologous transplantation of ovarian tissue from one identical twin to her sister or the transplantation of ovarian tissue from nonidentical but immuno-compatible sisters, both followed by natural conception. Are these scenarios of human procreation morally compatible with the Catholic moral tradition? I would suggest that they are. In these cases, in contrast to what would be the vast majority of cases of heterologous OTT, the transplanted eggs were not rejected by the

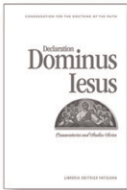


recipient's immune system. In other words, metaphysically speaking, they were recognized as part of the self. As such, in conjugal acts following these cases of heterologous OTT, the women were still giving their spouses the opportunity to fertilize their gametes. They were still giving of themselves. Thus, these conjugal acts remain authentic acts of total self-giving that respect the nature and the dignity of human persons.<sup>15</sup>

<sup>15</sup> The author thanks his brothers Basil Cole, O.P., and Ezra Sullivan, O.P., and the journal's anonymous referees for their insightful critiques.

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