

The Origin of the Soul in Light of Twinning, Cloning, and Frozen Embryos

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Précis:

Questions about the origin of the soul are of interest for at least two reasons. First, a developed version of substance dualism should include a treatment of the origin of the soul. Second, certain metaphysically and morally relevant phenomena—twinning, cloning, and frozen embryos—have been presented as evidence against substance dualism.¹ In this article, my main objective is to analyze three views of the origin of the soul in order to provide a rebuttal to those who would use these phenomena as defeaters of substance dualism.

Before diving into the issues, two preliminary points should be made. For one thing, justification for believing in substance dualism does not depend on developing a view about the origin of the soul. Why? Because the main issues that justify belief in substance dualism are quite independent of issues surrounding the soul's origin. If our justification for believing in substance dualism is solid, then one could have adequate grounds for believing that, say, Dolly the cloned sheep has a soul even in the absence of a view of the soul's origin. This often happens in our intellectual lives, i.e., we are often justified in believing that something exists even if we have no idea how the thing came about. Further, I believe that the defeating force of twinning, cloning, or frozen embryo cases is not sufficient to overturn the evidence for substance dualism, or so I shall argue.

For another thing, what exactly are we looking for when it comes to an answer to questions about the origin of the soul? Clearly,

our answer should not contradict established scientific facts (though we should be sure that certain pieces of evidence are established scientific facts and not what naturalists tell us the facts have to be for philosophical or complementarian naturalism to be true).² In this sense, our answer should be consistent with science. But the nature of the question is not basically a scientific one. The core issues regarding the existence and origin of the soul cannot be resolved by science because 1) they are primarily philosophical and theological issues, and 2) different solutions are often, though admittedly not always, consistent with the scientific data and, thus, adjudication among those solutions is not a matter, or simply a matter, of the scientific data themselves. What we should be seeking is an answer that makes theological and philosophical sense while remaining consistent with genuine scientific facts.

As I mentioned above, twinning, cloning and frozen embryos have been raised as defeaters of substance dualism. In twinning, a single zygote splits to form identical twins during the early stages of development, while each cell is still totipotent, i.e., capable of making an entire new organism. The conclusion is sometimes drawn that during these early days of development, there is not a single human person present. Nor is there a soul, because a soul, if it exists at all, is not the sort of thing that splits—a view which one apparently would have to believe if one is committed to the idea that a soul comes into existence at the point of conception and that each zygote after twinning has its own soul.

In what is called nuclear transplant cloning, an individual organism is created from a single somatic (body) cell without sexual reproduction. In this case, the genetic material from a body cell is transplanted into an egg from which the nucleus (and, thus, the genetic materials) has been removed.

In cases where frozen embryos exist, some have wondered what to make of the soul's reality when it is not functioning. What is a substance dualist to make of the soul's existence and origin in light of these three phenomena? To answer this question I shall clarify two important differences between Cartesian and Thomistic substance dualism as I understand them, explain three views of the origin of the

soul in cases of normal procreation, and apply the insights gained to the problem cases.

Cartesian and Thomistic Substance Dualism

In the same way that Calvin may not have been a Calvinist, Descartes may not have been consistently a Cartesian dualist, and Aquinas may not have accepted all aspects of what I will call Thomistic substance dualism.³ The views of Descartes and Aquinas are extremely sophisticated, and it is beyond my present concern to sort out the various details of their respective philosophical anthropologies. Still, there are certain broad features that have come to be associated with Cartesian substance dualism as advocated, for example, by Richard Swinburne and John Foster, and the same may be said for contemporary Thomistic substance dualists such as John Cooper, Peter Kreeft and Ron Tacelli.⁴

As I use the labels from now on, I will employ them in widely accepted ways while making no claim to be accurately representing Descartes or Aquinas in every detail. Still, I do believe my use of these labels accurately captures the spirit and, often, the letter of each thinker. It also needs to be said that, due to the current loathing for substance dualism, there is a widespread revisionist tendency among philosophers to show that, after all, Aristotle and Aquinas were not really dualists.⁵ I do not wish to enter that debate here, but suffice it to say that its presence muddies the waters regarding Aquinas' actual position.

There are two key features relevant to our topic that distinguish Cartesian and Thomistic substance dualism as I am interpreting them. For one thing, Cartesians tend to identify the soul with the mind, and this generates a mind/body problem instead of what I believe to be the more preferable soul/body problem. For the Thomist, the mind is a faculty (a natural grouping of capacities) of the soul which may require certain physical states of affairs to obtain in the brain and central nervous system before it can function. But for the Thomist, the soul itself does not require these states of affairs to obtain before it is present and, in fact, it is the soul that is responsible for the development of the brain and nervous system and, more generally, the body. Descartes'

reduction of the soul to the mind brought about an identification of the person with a purely conscious substance, or at least a substance with the ultimate capacities for consciousness. For the Thomist, the soul is broader than the capacities for consciousness and is responsible for organic functioning and the activities of life.

Second, Descartes is typically interpreted as depicting the body as a physical machine with the result that he could not explain just what it is that makes the body human. His substance dualism involved a dualism of two separable substances—mind and body. For modern Cartesians, the mind is a substance, and the body is a property-thing or ordered aggregate. Either way, the body is merely a physical object totally describable in physical terms. The Cartesian notion of the body includes the idea that the sole relationship between the mind and the body is an external causal relationship. In this way, while Cartesian substance dualists do, indeed, treat the mind as a substance, they nevertheless depict the body/soul unity as a property-thing in which the substantial soul is externally related to an ordered aggregate, the body.

By contrast, Thomistic substance dualists, at least on my version, will admit that the body is a physical structure of (both separable and inseparable) parts, but they will want to insist that it is also a *human* body due to the diffusion of the soul as that which provides the essence of the body and which is fully present in every body part. In keeping with this view, the Thomist will insist on a deeper, more intimate relationship between soul and body than the mere causal connection between a Cartesian mind and a solely physical body. For the Thomist, there is a modal distinction between soul and body: the soul could exist without the body but not vice versa. Thus, Thomistic substance dualism is not a dualism of two separable substances. There is only one substance, though I do not identify it with the body/soul composite. Rather, I take the one substance to be the soul, and the body to be an ensouled biological and physical structure that depends on the soul for its existence.

On this view, function determines form, not vice versa. The various teleological functions latent within the soul are what guide the development, and ground the spatially extended structure, of inseparable parts (the body). Thus, the substantial soul is a whole that

is ontologically prior to the body and its various inseparable parts. The various physical/chemical parts and processes (including DNA) are tools, instrumental causes that are employed by higher order biological activities in order to sustain the various functions grounded in the soul. So the soul is the first efficient cause of the body's development as well as the final cause of its functions and structure which are internally related to the soul's essence. The functional demands of the soul's essence determine the character of the tools but they, in turn, constrain and direct the various chemical and physical processes that take place in the body.

Regarding the way the soul is in the body and vice versa, the soul is "in" the body as the individuated essence that stands under, informs, animates, develops, and unifies all the body's parts and functions and makes the body human. And the body is "in" the soul in that the body is a spatially extended set of internally related heterogeneous parts that is an external expression of the soul's "exigency" for a body, i.e. of the non-extended law (structural set of capacities) for forming a body to realize certain functions latent within the soul itself.

These two issues—the soul vs. mind and the humanness of the body along with its relationship to the immaterial soul or mind—are major factors that distinguish Thomist and Cartesian dualism.

Three Views of the Origin of the Soul in Normal Cases

In the history of the church, there have been two different positions about the origin of the human soul: Creationism and Traducianism.⁶ Each has had its fair share of advocates. Briefly put, Creationists hold that at some point, God creates a new soul *ex nihilo*, and Traducians affirm that the soul is in some way generated by way of the act of reproduction and comes to be at the time of conception. For Creationists, God is the primary cause of the soul's coming to be; for Traducians, He is a secondary cause. In order to understand these views more clearly, let us call all the strictly physical conditions involved in reproduction (e.g., the chemical and physical aspects of

sperm, egg, and their union) the PR conditions. PR conditions are fully describable in the language of physical science.

There are two different versions of creationism: Cartesian dualist Creationism and Thomistic dualist Creationism. According to Cartesian Creationism, egg and sperm are merely physical/chemical entities, and the PR conditions are sufficient for the generation of a human's body which, you will recall, is merely a physical object. On the Cartesian Creationist view, at some point between conception and birth, God creates a soul and connects it to a body that results entirely from PR conditions.

By contrast, according to at least one form of Thomistic Creationism, PR conditions are not sufficient for the formation of a human body which requires ensoulment (and, thus, the instancing of human nature to form an individuated soul) to be human.⁷ On this view, when PR conditions obtain, God directly instantiates the abstract property being human and creates an individual human soul. When the individual soul comes into existence, it is not then externally linked to a strictly physical body. Rather, the physical entities that constitute the PR conditions undergo substantial change and are incorporated into and subsumed under the new individuated essence to form one single substance.

There have been different versions of Traducianism, and some of them must be rejected. For example, one form of Traducianism found in Tertullian asserts that the soul of the child is a separated fragment of the father's soul. As one theologian put it, in this case, we are all literally a chip off the old block!⁸ While souls may certainly fragment in the sense of containing poorly integrated functioning (e.g., in multiple personality or split brain cases), because souls do not have separable parts, they are not the sorts of things from which pieces can be taken.

A more sophisticated form of Traducianism asserts that PR conditions are not merely physical. In addition to physical/chemical properties and parts, egg and sperm have soulish potentialities that, on the occasion of fertilization, become actualized. Here, the union of sperm and egg amount to a form of substantial change in which two different entities come together and this gives rise to the emergence of a new substantial whole, namely, a soul that informs the zygote body

and begins to direct the process of morphogenesis. This Traducian view has much in common with the Thomistic Creationist position, especially when it comes to describing 1) the incorporation of PR entities under the new essence to form a unified substance and 2) the subsequent role of the soul in the development of the body. The main difference between them is whether the soul is created on the occasion when PR conditions obtain or whether those conditions are sufficient for the soulish potentialities within sperm and egg to give rise to a new soul by way of God's secondary causality.

Application to the Problem Cases

What resources do these three views (Cartesian Creationism, Thomistic Creationism, and Traducianism) have for dealing with the abnormal cases mentioned earlier? To begin with, all three views accept various forms of relationship (e.g., causal interaction) between soul and matter. God, angels, and demons are not physical, but they can actually interact with matter.⁹ Even if one does not believe in their reality, it is strongly conceivable that if they existed they could interact with matter. Moreover, my intending to raise my arm brings the latter about, and if I get stuck with a pin I feel pain, so soul/matter interaction is perfectly intelligible and actually takes place.

Second, Christian theists have developed different models for God's relationship to the laws of nature and to natural causal processes. The main views of the world's causal activity in relationship to God are 1) *the full secondary causality view* (God sustains the world in existence but in the normal course of things, the entities of the world exert their own causal powers, and such exertions are sufficient to produce changes in the world), 2) *occasionalism* (there are no autonomous, distinct causal powers possessed by created objects; God is the only true cause, and no effect in nature is brought about by natural entities), and 3) *concurrentism* (every event cause has God collaborating with the natural causal entity, cooperating with its causal activity by ratifying that activity which alone would not be sufficient to produce the effect). In all three views, the regularity of natural law and causal processes is due to God's faithfulness in regularly sustaining,

causing, or ratifying certain effects when certain causal conditions obtain in the world.

In light of causal interaction and God's relationship to natural causal processes, let us think through these cases beginning with the Cartesian Creationist view. For the Cartesian Creationist, God desires for a human soul to have a body through which it interacts with the world. The body is something God makes for a purpose: to be causally connected to a soul and to be its primary means of effecting the natural world. On this view, God regularly and faithfully creates a soul when the PR conditions for body formation obtain because that is why PR conditions were created in the first place. Now just as God continues to cooperate regularly and faithfully with laws of nature in general, so God continues faithfully and regularly to create souls when the normal PR conditions obtain *regardless of the pathway used to reach PR conditions*. Thus, if PR conditions obtain via cloning or twinning, God still honors his commitment to why he created those conditions in the first place, viz., to be the body of a soul.

In frozen embryo cases, The Cartesian Creationist has two options: she can deny that the soul has been created yet or, more likely, she can argue that the soul follows a pattern throughout reality, namely, something can exist without functioning. Just as the life principle in an acorn can exist even though its capacities are dormant and unrealized, so the soul can exist even if its capacities for organic functioning and consciousness are not actualized.

As I am representing the view, the Thomistic Creationist will adopt the same line of approach except for two differences. First, he will say that when PR conditions obtain in cloning or twinning cases, God uses this as the occasion for creating a soul that incorporates the physical PR constituents into one substance, rather than creating a soul and causally connecting it to a body developing out of PR constituents. Here the Thomistic Creationist adopts a form of miraculous concurrence as a model of God's activity in generating the body and its unity with the soul to form a substance: PR conditions are not sufficient for such a unity to appear, and God must exercise causal power and create a soul that, then, forms a body. Second, the Thomistic Creationist will say that in cases of frozen embryos, since the PR conditions have

obtained, there is a soul present with latent powers that, under the right circumstances, will begin to function.

The Traducian will agree that in frozen embryo cases the soul exists with dormant potentialities. But the Traducian will take a different approach to cloning and twinning cases. For the Traducian, there is no a priori way to read off from the abstract notion of a soul containing an essence the precise nature of the immanent laws that constitute that essence. We cannot specify what the boundaries are regarding what physical conditions can or cannot lead to the generation of a new soul.

For example, if we assume that a necessary condition for something being physical is that it is extended, and if we assume for the sake of argument that chemical elements and compounds are substances, then those elements/compounds have unextended, immaterial (though not soulish) essences (goldness, being salt). Moreover, on our assumption, chemical change is substantial change.¹⁰ This means, for example, that when sodium and chlorine are brought together to form salt, purely physical processes of attraction, rearrangement of electrons, etc. cause two immaterial essences to cease to be exemplified (being sodium, being chlorine), and a new immaterial essence to obtain (being salt). Note carefully that even if this is the wrong read of chemical change, this understanding is certainly conceivable and, thus, the idea that purely physical conditions can affect the presence or absence of an immaterial essence is at least intelligible.

On this view, it would be wrong to say that sodium or chlorine is potentially salt. Something either is or is not sodium, chlorine, or salt, and sodium and chlorine taken as individual substances are not salt. If we wish, we could say that sodium and chlorine are *possibly* salt. This simply means that, under the right circumstances, sodium and chlorine are the right sorts of things that can undergo substantial change and form a completely new individual substance (salt) with a new nature.

In Genesis 1 we are told that animals (and plants) reproduce after their kind, and this has frequently been taken to imply a Traducian view of the generation of animal souls. Now in this case, it should be clear that the genetic materials of animals contain soulish potentialities and, thus, are not merely physical/chemical entities. In the case of chemical change and animal generation, physical changes, in some

way or another, give rise to changes in which immaterial essences are exemplified (chemical change) or to the generation of an immaterial soul. There was no way a priori to decide the precise nature of these causal connections, and empirical research was necessary for their discovery.

Applied to twinning or cloning, we simply discover as a brute fact that certain substances, once they have developed a structure adequate to provide a framework for part replacement or for generating new substances, have the capacities in question. Nothing whatsoever in the notion of substantial soul provides a bar to these realities. Because starfish are living, we take them to have souls. But a piece of a starfish can be split off and used to grow a new starfish. In this case, the soul of the original starfish is not losing a piece of itself. Rather, as a brute fact we discover that certain organic body parts of the starfish have totipotentiality, soulish potentials to develop a new organism.

Why should this seem odd if we grant the intelligibility of viewing chemical change as substantial change or if we grant that sperm and egg have these potentialities? In twinning or in cloning, certain organic entities (cells) simply have the relevant potentialities, and nothing whatsoever about belief in a substantial soul can place a priori limits on what physical conditions can or cannot give rise to a new soul. We must look to empirical study or revelation for help in that way.

I have not tried to argue for substance dualism nor for a specific version thereof. My purpose has been to clarify different views about the origin of the soul, taken as a substantial, immaterial entity, and to use the resources they provide to rebut the charge that the phenomena of twinning, cloning, and frozen embryos are defeaters for substance dualism. Much more work needs to be done in this area, but as an initial contribution to that broader project, I have tried to sketch out the general resources available to substance dualists to deal with these problematic cases.

Notes

1. Cf. A. A. Howsepian, "Who Or What Are We?" *Review of Metaphysics* 45 (March 1992): 483-502.
2. For more on these varieties of naturalism, see J. P. Moreland, Scott Rae, *Body and Soul: Human Nature and the Crisis in Ethics* (Downers Grove: InterVarsity Press, 2000).
3. For more on Descartes' dualism, especially as it relates to the thought of Aquinas, see Theresa M. Crem, "A Moderate Dualist Alternative to Cartesian Dualism," *Laval thaeologique et philosophique* 35 (June 1979): 153-175; John Mourant, "Cartesian Man and Thomistic Man," *The Journal of Philosophy* 54 (June 1957): 373-382; Albert G. A. Balz, "Concerning the Thomistic and Cartesian Dualisms: A Rejoinder to Professor Mourant," *The Journal of Philosophy* 54 (June 1957): 383-390; J. P. Moreland, Stan Wallace, "Aquinas vs. Descartes and Locke on the Human Person and End-of-Life Ethics," *International Philosophical Quarterly* 35 (September 1995): 319-30. For helpful treatments of Aquinas, see Brian Davies, *The Thought of Thomas Aquinas* (Oxford: Clarendon, 1992), pp. 207-226; Anthony Kenny, *Aquinas on Mind* (London: Routledge, 1993).
4. See Richard Swinburne, *The Evolution of the Soul* (Oxford: Clarendon Press, rev. ed., 1997); John Foster, *The Immaterial Self* (London: Routledge, 1991); John Cooper, *Body, Soul, & Life Everlasting*; Peter Kreeft, Ron Tacelli, *Handbook of Christian Apologetics* (Downers Grove: InterVarsity Press, 1994), pp. 227-256. Though she is not happy with the term, Eleanore Stump defends a version of Thomistic substance dualism that has many (but not all) things in common with the view I am defending. See her "Non-Cartesian Substance Dualism and Materialism without Reductionism," *Faith and Philosophy* 12 (October 1995): 505-531. William Hasker develops a view that, while different from traditional versions of substance dualism, is certainly closer to substance dualism than to physicalism or property dualism. See "Emergentism," *Religious Studies* 18 (December 1982): 473-488; "Brains, Persons, and Eternal Life," *Christian Scholar's Review* 12 (1983): 294-309; "Brains and Persons," in *The Reality of Christian Learning*, ed. by Harold Heie and David L. Wolfe (Grand Rapids: Eerdmans, 1987), pp. 181-203; "Concerning the Unity of Consciousness," *Christian Scholar's Review* 12 (October 1995): 532-547.
5. Cf. Howard Robinson, "Aristotelian Dualism," in *Oxford Studies in Ancient Philosophy: 1983* (Oxford: Oxford University Press, 1983), pp. 123-144.
6. Creationism is fairly familiar to most people today. For an analysis of traducianism, see *The Catholic Encyclopedia*, special edition, s.v. "Traducianism," by C. A. Dubray; *New Catholic Encyclopedia*, s.v., "Soul, Human, Origin of," by J. E. Royce; s.v. "Traducianism," P. B. T. Bilaniuk; William G. T. Shedd, *Dogmatic Theology Volume II* (Grand Rapids:

- Zondervan, 1988; original edition, 1888), pp. 3-94; Charles Hodge, *Systematic Theology*, Volume II (Grand Rapids: Eerdmans, 1975), pp. 65-78.
7. Aquinas himself believed that as the fertilized egg developed, it was animated first by a purely vegetative, then by a sensitive, and finally by an intellectual, human soul. See *Summa Theologiae*, Ia, Question 118, Article 2, Reply Obj. 2.
 8. Cf. Richard Swinburne, *The Evolution of the Soul*, p. 199.
 9. For defenses of dualist interaction, see Keith Yandell, "A Defense of Dualism," *Faith and Philosophy* 12 (October 1995): 551-553; J. P. Moreland, "A Defense of Substance Dualism," in *Christian Perspectives on Being Human: A Multidisciplinary Approach* ed. by J. P. Moreland, David Ciochi (Grand Rapids: Baker Book House, 1993), pp. 75-77.
 10. For a defense of this view of chemical change, see Richard Connell, *Substance and Modern Science*, pp. 81-87; cf., Enrico Cantore, *Atomic Order* (Cambridge, Mass.: MIT Press, 1969), pp. 254-280; J. Van Brakel, "Chemistry as the Science of the Transformation of Substances," *Synthese* 111 (June 1997): 253-282.