

The Explanatory Power of the Substance View of Persons

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The purpose of this essay is to offer support for the substance view of persons, the philosophical anthropology defended by Patrick Lee in his essay. In order to accomplish this the author (1) presents a brief definition of the substance view; (2) argues that the substance view has more explanatory power in accounting for why we believe that human persons are intrinsically valuable even when they are not functioning as such (e.g., when one is temporarily comatose), why human persons remain identical to themselves over time, and why it follows from these points that the unborn are human persons; and (3) responds to two arguments that attempt to establish the claim that the early human being is not a unified substance until at least fourteen days after conception.

KEYWORDS: abortion, personhood, substance, humanness.

I. INTRODUCTION

Patrick Lee offers an assessment of the abortion debate from the perspective of what has been the most dominant tradition of philosophical anthropology in Christian thought (2004a, 7–31). It is a tradition that offers an account of the human person that is known as the *substance view*. According to this view, a human being is intrinsically valuable because of the sort of thing it is and the human being remains that sort of thing as long as it exists. What sort of thing is it? The human being is a particular type of substance—a rational moral agent—that remains identical to itself

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as long as it exists, even if it is not presently exhibiting the functions, behaving in ways, or currently able to immediately exercise, these actions that we typically attribute to active and mature rational moral agents.

It is, in my judgment, the best account of human personhood. And as will become evident, this view is consistent with our common sense experience of encountering human beings in the world. For this reason, those who deny the substance view typically offer reasons that, though consistent with abortion being morally and legally permissible, result in counter-intuitive consequences.

Because I am in agreement with Professor Lee's point of view, in this paper I will extend and amplify, and attempt to clarify, aspects of his case for the substance view.¹ I will do this by (1) presenting a brief definition of the substance view; (2) arguing that the substance view has more explanatory power in accounting for why we believe that human persons are intrinsically valuable even when they are not functioning as such (e.g., when one is temporarily comatose), why human persons remain identical to themselves over time, and why it follows from these points that the unborn are human persons; (3) responding to two arguments that attempt to establish the claim that the early human being is not a unified substance until at least fourteen days after conception.

II. WHAT IS A SUBSTANCE?

A substance is an individual being of a certain sort. So, for example, the substance George W. Bush is a *human* substance, a being with a particular nature that we call "human." The substance Lassie too is an individual being, but she is a *canine* substance, a being with a particular nature that we call "canine." W. Norris Clarke offers a four-part definition of what constitutes a human substance:

- (1) it has the aptitude to exist *in itself* and not as a part of any other being;
 - (2) it is the unifying center of all the various attributes and properties that belong to it at any one moment;
 - (3) if the being persists as the same individual throughout a process of change, it is the substance which is the abiding, unifying center of the being across time;
 - (4) it has an intrinsic dynamic orientation toward self-expressive action, toward self-communication with others, as the crown of its perfection, as its very *raison d'être* . . .
- (1991, p. 105)

Each kind of living organism, or *substance*, including the human being, maintains identity through change as well as possessing a nature or

essence that makes certain activities and functions possible. “A substance’s *inner nature*,” writes J. P. Moreland “is its ordered structural unity of ultimate capacities. A substance cannot change in its ultimate capacities; that is, it cannot lose its ultimate nature and continue to exist” (1995, p. 101). Consider the following illustration.

A domestic feline, because it has a particular nature, has the ultimate capacity to develop the ability to purr. It may die as a kitten and never develop that ability. Regardless, it is *still* a feline as long as it exists, because it possesses a particular nature, even if it never acquires certain functions that by nature it has the capacity to develop. In contrast, a dog is not said to lack something if it cannot purr, for it is by nature not the sort of being that can have the ability to purr. A feline that lacks the ability to purr *is still a feline* because of its nature. A human being who lacks the ability to think rationally (either because she is too young or she suffers from a disability) *is still a human person* because of her nature. Consequently, a human being’s lack makes sense *if and only if* she is an actual human person.

Second, the feline remains the same particular feline over time from the moment it comes into existence. Suppose you buy this feline as a kitten and name him “Cartman.” When you first bring him home you notice that he is tiny in comparison to his parents and lacks their mental and physical abilities. But over time Cartman develops these abilities, learns a number of things his parents never learned, sheds his hair, has his claws removed, becomes ten times larger than he was as a kitten, and undergoes significant development of his cellular structure, brain and cerebral cortex. Yet, this grown-up Cartman is identical to the kitten Cartman, even though he has gone through significant physical changes. Why? The reason is because living organisms, substances, maintain identity through change.

Another way to put it is to say that organisms, including human beings, are ontologically prior to their parts (Moreland in Moreland & Rae, 2000, p. 206), which means that the organism as a whole maintains absolute identity through time while it grows, develops, and undergoes numerous changes, largely as a result of the organism’s nature that directs and informs these changes and their limits. The organs and parts of the organism, and their role in actualizing the intrinsic, basic capacities of the whole, acquire their purpose and function *because* of their roles in maintaining, sustaining, and perfecting the *being as a whole*. This is in contrast to a thing that is not ontologically prior to its parts, like an automobile, cruise ship, or computer. Just as a sporting event (e.g., a basketball game, the British Open) does not subsist through time as a unified whole, an automobile, ship, or computer does not as well (Moreland &

Rae, 2000, p. 178). It is, rather, in the words of Moreland, “a sum of each temporal (and spatial) part . . .” Called *mereological essentialism* (from the Greek “meros” for “part”), it “means that the parts of a thing are essential to it as a whole; if the object gains or loses parts, it is a different object” (Moreland & Rae, 2000, p. 178). Organisms, however, are different, for they may lose and gain parts, and yet remain the same thing over time.

Because one can only develop certain functions because of the sort of being one *is*, a human being, at every stage of her development is *never* a potential person; she is *always* a person with potential even if that potential is never actualized due to premature death or the result of the absence or deformity of a physical state necessary to actualize that potential. For example, a human being without vocal chords in a society in which there are no artificial or transplant vocal chords never loses the potential to speak, but she will in fact never speak because she lacks a physical state necessary to actualize that potential.

III. EXPLANATORY POWER OF THE SUBSTANCE VIEW

Many philosophers and bioethicists who support abortion rights, as Professor Lee notes in his essay, maintain that you and your fetal self are the same substance, and thus they agree with pro-lifers on that point. Where they disagree is on the question of whether intrinsic value (IV) is a property had by the human being as long as it exists (Boonin, 2002, pp. 49–56; Stretton, 2003). That is, they maintain that IV need not be an essential property of a human substance. Although thinkers disagree among themselves as to what these properties or functions make one IV—some offer sentience, others suggest “ability to reason” and/or self-awareness or some combination of these—these criteria all have one thing in common: a human being is IV if and only if she presently possesses, and/or has the current capacity to exercise, certain properties or functions. The defender of this view argues that your fetal self was not intrinsically valuable because it had not yet acquired the property or properties that make you presently an intrinsically valuable human being (IVHB). That is, the human being does not become something else when in its early life it acquires these value-making properties, but rather, it remains the same being while undergoing the change from not intrinsically valuable to intrinsically valuable. I call the defender of this point of view the anti-equality advocate (AEA). I will first argue that this view is inadequate because it cannot account for some clear cases of IVHB, and then I will critique two responses to the substance view.

A. The AEA Cannot Account for Some Clear Cases of IVHB

When one is asleep, unconscious, or temporarily comatose, one does not have the present ability to reason or exhibit self-awareness, and yet it seems unreasonable to say that one is not IV in such states. The AEA, in response, may want to argue that the analogy between sleeping/unconscious/comatose human beings and the preborn breaks down because the former *at one time* in their existence functioned as IVHBs and will probably do so in the future, while the latter, the preborn, did not. Consequently, you are identical to your preborn substance, but you now possess a property that made you an IVHB that you lacked when you were preborn. But this will not work. Consider the following example.

Suppose your Uncle Jed is in a terrible car accident that results in him being in a coma from which he may or may not wake. Imagine that he remains in this state for roughly two years and then awakens. He seems to be the same Uncle Jed that you knew before he went into the coma, even though he's lost *some* weight, hair, and memories. Was he an IVHB during the coma? Could the physicians have killed Uncle Jed—the living organism we refer to as “Uncle Jed”—during that time because he did not exhibit certain functions or have certain present capacities? If one holds that IV depends on capacities that are immediately exercisable, it is difficult to see why it would be wrong to kill Uncle Jed while he was in the coma. Yet it would be wrong, precisely because Uncle Jed is identical to himself through all the changes he undergoes and that self, by nature, has certain basic capacities.

Consequently, the AEA cannot reply by arguing that Uncle Jed's life was intrinsically valuable during the coma because *in the past* he functioned as an IVHB and probably will do so in the future. For we can change the story a bit and say that when Uncle Jed awakens from the coma he loses all his memories and knowledge, including his ability to speak a language, engage in rational thought, and have self-awareness. He then would be in precisely the same position as the standard fetus. He would still literally be the same human being he was before the coma but he would be like he was before he had a “past.” He would have the basic capacities to speak a language, engage in rational thought, and have self-awareness, but he would have to develop and learn them all over again in order for these basic capacities to result, as they did before, in present capacities and actual abilities.

The AEA does not want to exclude Uncle Jed and others like him, so the AEA must offer an account that includes these people but excludes the human beings he does not think are intrinsically valuable (e.g., the preborn).

So, he cannot claim that it is the substance's present exercisable capacity that makes him intrinsically valuable, for that would exclude Uncle Jed and his friends. And, as we have seen, having a *past* does not do the trick either. But suppose the AEA says in reply, "Okay, what makes Uncle Jed and his friends intrinsically valuable is that there is a psychological connection between this comatose clan and their post-comatose selves" (Stretton, 2003). But that can't be right. For imagine that *while in the coma* Uncle Jed's physician *tells you* that your uncle will come out of the coma, but when he comes out he will *not* have any of the memories, beliefs, or knowledge that he once possessed, though he will be able to regain his prior abilities and accumulate new memories and experiences over the years following his recovery through the normal process of learning and development. In essence, Uncle Jed would be, while in the coma, in precisely the same position as the standard fetus, but unlike in the previous Uncle Jed story you would *know that fact* prior to his coming out of the coma. But according to the AEA it would be permissible to kill Uncle Jed while he is in the coma, for, given the physician's diagnosis and prognosis, Uncle Jed would not be psychologically connected to an IVHB. Yet, given the fact that the AEA *concedes* that the substance "Uncle Jed" is the same human being who remains identical to himself while undergoing the accidental changes through pre-coma, coma, and post-coma, it is Uncle Jed's basic capacities as a human substance, and not his currently exercisable capacities (as a mature, undamaged substance), that best account for Uncle Jed as an intrinsically valuable human being during this entire ordeal. Of course, the typical human being possesses these basic capacities from the moment it comes into being as a zygote. Thus, if the preborn is not an intrinsically valuable human being, neither is Uncle Jed.

B. A Critique of Two Responses

In this section I critique two counter-arguments to the substance view that have been offered by philosophers David Boonin and Dean Stretton.

B.1. Boonin's Argument

In his analysis of Don Marquis's "future-like-ours" account of the prima facie moral wrongness of abortion (Marquis, 1995; Marquis, 1998a; Marquis, 1998b), Boonin bites the bullet when he dismisses a counter-example similar to my Uncle Jed story:

Of course, the critic might instead appeal to an imaginary case in which a temporarily comatose adult has had the entire contents in his brain

destroyed so that there is no information contained in his brain than is contained in that of the preconscious fetus. In this case, it seems right that my position does not imply that such an individual has the same right to life as you or I. But, as in the case of the adult who has never had conscious experiences, a critic of abortion cannot appeal to such a case as a means of rejecting my position because we cannot assume ahead of time that killing such individuals is seriously immoral. (2002, p. 78)

Although this reply may adequately rebut Marquis's account, it does not succeed in the case I offer in this essay. Because of space limitations, I will explore only one line of reasoning on this matter. Recall that in my example, Uncle Jed once had conscious experiences, memories, particular skills and abilities, etc., but lost any mental record of them, and thus will have to relearn all of his abilities and knowledge as he did before he had any conscious experiences. But they would not be the same experiences and desires he had before. That is, he would be in precisely the same position as the standard fetus, with all the basic capacities he had at the beginning of his existence. So, this is Boonin's dilemma: either it's prima facie wrong to kill Uncle Jed or it isn't. Suppose he opts for the first horn of the dilemma, arguing that killing Uncle Jed is seriously wrong because he once exercised abilities that resulted from his basic capacities (which would be the only justification available given Boonin's understanding of personhood). But what precisely is doing the moral work in this judgment? Is it Uncle Jed's past? That does not seem right, for remember that that past will never be regained, so killing Uncle Jed is not preventing the eventual return of a cluster of experiences and desires uniquely associated with Uncle Jed. After all, if Uncle Jed were in precisely the same situation except that he was so damaged that he would stay in a comatose state for the rest of his life (Uncle Jed₂), a legitimate, though disputed, question to raise by his attending physicians would be whether continued medical treatment of Uncle Jed₂ is warranted. The question would be legitimate because Uncle Jed₂'s prognosis would be essentially hopeless. However, if there is a very good chance that he will regain his abilities and acquire new knowledge, experiences and memories over time, his prognosis would not be hopeless. Thus, it seems that if Boonin were to conclude correctly that it would be wrong to kill Uncle Jed before he came out of the coma, what would be doing the moral work would not be Uncle Jed's past, but that he is a being of a certain sort with certain basic capacities that make certain functions and abilities possible. That is, Boonin would have to employ the resources of the substance view. But this would mean that abortion is prima facie morally wrong as well, for the standard fetus

is a being of the same sort with certain basic capacities that make certain functions and abilities possible.

To tease this illustration out further, imagine that you have another uncle, Herb. Herb is in precisely the same position as Uncle Jed, except that Herb will regain all his memories, prior abilities, etc., and it will take Uncle Herb exactly the same amount of time to reacquire what he has lost as it will for Uncle Jed to acquire new memories and relearn old abilities and skills. If I understand correctly Boonin's view of personhood, it would be permissible to kill Uncle Jed but not Uncle Herb, even though the only difference between them would be that the latter will regain what he has lost while the former will gain memories he never had and many abilities he once mastered. Boonin clearly would not want to assert that it is *prima facie* permissible to kill a reversibly comatose person. Yet, given his position, it is *prima facie* permissible to kill a similarly situated reversibly comatose human being merely on the grounds that he will not be able to reacquire past traits and memories and he will have to relearn skills and abilities he possessed prior to his coma. It seems to me that the difference between Uncle Jed and Uncle Herb carries no moral weight whatsoever.

Of course, Boonin bites the bullet and asserts a point of view that opts for the second horn of the dilemma: it is not *prima facie* wrong to kill Uncle Jed because the entirety of Uncle Jed's past abilities, experiences and knowledge would be gone forever (which would be consistent with Boonin's understanding of personhood). But the premise on which this argument is based is as controversial as the conclusion for which it is employed to support: having a human nature with intact basic capacities is *not sufficient* for one to have a right to life if one has not engaged in certain value-giving functions or mental activities that result from these basic capacities but will likely do so in the future. Granted, such a premise will support the belief that most abortions are not serious moral wrongs, a conclusion many people, including Boonin, find desirable. But that is precisely the conclusion that Boonin attempts to establish with the help of this controversial premise.

Opting for the second horn of the dilemma fails on two other counts. First, as Professor Lee aptly points out in his essay, the AEA account of intrinsic value, of which Boonin's position is an example, undermines the moral equality of those human beings the AEA considers intrinsically valuable (2004a, pp. 8–9). That is, the AEA cannot explain why fundamental human rights ought not to be distributed on the basis of native intellectual abilities and other value-giving properties, e.g., rationality or self-awareness. This is because capacities are stages along a continuum, with some basic capacities being exercisable only as a result of other

capacities first being actualized (e.g., the proximate capacity to learn a language requires a certain level of brain development) and the present exercisability of those capacities differ in their degrees (e.g., people have a wide range of language skills). Some adult human beings are more or less rational (in the sense of the *developed ability* to reason) and more or less self-aware in comparison to others, and some human beings, because they are damaged or immature, are in the process of developing, and have not yet achieved, certain second-order capacities (e.g., the requisite brain structure to develop the capacity to learn algebra) that make certain first-order capacities possible (e.g., the present capacity to do algebraic problems if you know algebra).² But if that is the case, then some “intrinsically valuable” human beings are more or less “intrinsically valuable” than others. But intrinsic value is not a degreed property; you either have it or you don’t, and thus IV cannot be conditioned upon the possession of a degreed property, for if you have more of it you should have more value. It would follow from this that the notion of human equality is not only illusory when applied to the preborn (which the AEA already believes) but to all human beings as well. But the AEA does not want to deny human equality among IVHBs. Yet, the AEA can only reject this undesirable consequence if he embraces the notion that human beings are intrinsically valuable because they are rational moral agents *by nature* from the moment they come into existence.

Second, not only can the AEA not account for human equality, he cannot account for the wrongness of intentionally creating unequal human beings who are not intrinsically valuable (according to the AEA’s perspective). For example, what would be wrong with a developmental biologist manipulating the development of an early embryo-clone in such a way that what results is an infant without higher brain functions, but whose healthy organs can be used for ordinary transplant purposes or for spare parts for the person from which the embryo was cloned?³ Given the dominant accounts of moral personhood—views that claim that a being’s possession of intrinsic value is contingent upon some presently held property or immediately exercisable mental capacity to function in a certain way—it is not clear how intentionally creating such deformed beings for a morally good purpose is morally wrong. I suppose one could argue that it is morally wrong because the unborn is entitled to her higher brain functions. But as abortion-choice proponent Dan Brock argues, “this body clone” could not arguably be harmed because of its “lack of capacity for consciousness” (1999, p. E8). Yet, he concedes that “most people would likely find” the practice of purposely creating permanently non-sentient human beings “appalling and immoral, in part because here the cloned later twin’s

capacity for conscious life is destroyed *solely as a means* to benefit another” (1999, p. E9). This, however, only makes sense if the cloned twin is entitled to her higher brain functions. But according to the view embraced by most AEAs, one cannot have rights (including entitlements) unless one has interests (and interests presuppose desires), and the pre-sentient fetus has no interests (because she has no desires).⁴ So, the entitlement account does not do the trick for the AEA. It seems to me that the substance view is the account of human personhood that best explains the moral repugnance that one feels when one first appreciates the prospect of these grisly activities becoming common place in our society under the rubric of “reproductive rights”: it is *prima facie* wrong to destroy the physical structure necessary for the realization of a human being’s basic, natural capacity for the exercisability of a function that is a perfection of its nature. Although this provides moral warrant for the legal prohibition of intentionally producing deformed human beings for an apparently good purpose, it also grounds significant legal restrictions on abortion, a procedure that destroys the physical structure necessary for the realization of a human being’s basic, natural capacity for the exercisability of a function that is a perfection of its nature.

B. 2. Stretton’s Argument

Dean Stretton offers a thought-experiment (2000, pp. 228–239). He asks us to imagine an organism, such as a dog (who we will call “Phydeaux”),⁵ which is not an intrinsically valuable entity. However, suppose we have the technological sophistication to add to Phydeaux’s brain the higher brain (or cerebrum) of a fully-mature human brain and we in fact do it. According to Stretton, because Phydeaux now possesses the properties of an intrinsically valuable being—i.e., he has the immediate exercisable capacity for rational thought, moral agency, etc.—this is an example of an organism remaining identical to itself but changing from non-intrinsically valuable (a non-person) to intrinsically valuable (a person). In the same way, the fetus changes from non-intrinsically valuable to IV when it acquires certain properties—immediately exercisable capacities—that philosophers such as Stretton consider decisive in correctly attributing personhood to any entity.

But there are reasons to doubt that this thought-experiment properly accounts for our intuitions on this matter. As Professor Lee points out, the thought-experiment “works” for Stretton because he presupposes in his interpretation of it that his view of persons is correct, i.e., he reasons in a circle.⁶ But one need not interpret the story in this way. Lee offers two options. (A) the person whose cerebrum was transplanted to Phydeaux

continues existence while Phydeaux does not. “One could say this,” writes Lee, “if one believed that the human being is an organism but that his cerebrum is his only indispensable organ” (2004c, forthcoming). (B) According to this option (which Lee prefers, and I do too), if the human being “continues to live” minus her cerebrum, “she remains a (damaged) human person; and *if* combining a cerebrum with” Phydeaux’s “bodily parts produces a rational animal, a substantial change occurs and so” Phydeaux goes out of existence “and a new rational animal, a new person, comes to be” (2004c, forthcoming). To employ an analogy, Phydeaux’s body and the human’s cerebrum are like a sperm and an egg, playing the roles of two living parts of other organisms that, when combined, “*dynamically interact*” (Joyce, 1978, p. 101) and become a brand new organism. According to Lee, the second option makes perfect sense under a substance account, which holds “that a rational animal is a type of substance, and that being rational (having the natural capacity for conceptual and free thought) is a specific difference, a feature expressing (in part) what the substance is instead of an accidental characteristic” (2004c, forthcoming). To put it another way, a human person is a rational moral agent by nature from the moment it comes into being; it is a substantial unity identical to itself that subsists through time. No being *becomes* such a substance, for substantial change is a change that eliminates the being rather than something that the being undergoes. Phydeaux does not *become* an intrinsically valuable person when his living bodily parts dynamically interact with the human cerebrum; rather, Phydeaux ceases to exist and his living bodily parts contribute to the bringing into being of a substance that never was.

But suppose we grant to Stretton that a being may remain identical to itself and yet change from non-intrinsically valuable to intrinsically valuable. Assuming that intrinsic value is not an essential property—that is, one can lose it and regain it and still not undergo substantial change—Stretton’s analogy does not establish his point that the fetus does not have intrinsic value but acquires it later in life while remaining identical to itself through these changes. For in the case of pre-IV Phydeaux, prior to the attachment of the human cerebrum, he had no basic capacity by nature to grow one. The fetus and Uncle Jed—and the IV-Phydeaux if he lapses into an Uncle-Jed-like coma—all possess the basic capacities of a rational moral agent. Consequently, all that Stretton proves—if he is successful—is that IV is not an essential property for Phydeaux. He does not show that IV is not an essential property of human beings from the moment that they come into existence or that the fetus does not have intrinsic value prior to having the present capacity to exercise functions we typically associate with rational moral agents who are mature.

In his rebuttal to Lee's response to his initial argument, Stretton seems to miss the point:

Putting aside the right to life (which is the very case in dispute), our background knowledge does not include any cases where a being's natural capacities entitle it to any substantial (significant) type or level of respect. Suppose, for example, I have a natural capacity to become a great athlete, or a brilliant intellectual. This natural capacity (or indeed any other essential property) would hardly entitle me to any respect if, say, too much TV has in fact turned me into a fat, lazy dullard. Substantial respect *would* of course be owed to those who *are* great athletes or brilliant intellectuals—perhaps in virtue of their developed capacity for these things, or perhaps in virtue of other accidental properties, such as their achievements in these areas. Generalising, it appears we do not owe to beings, in virtue of their natural capacities (or any other essential property), any substantial type or level of respect. The right to life, however, is surely itself about respect. . . . But now *because* we do not owe to beings, in virtue of their natural capacities (or any other essential property), any substantial type or level of respect, *it follows that* we do not owe to beings, in virtue of their natural capacities . . . the substantial type and level of respect involved in the right to life. And this is just to say that beings do not have a right to life in virtue of their natural capacities . . . but in virtue of their *accidental* properties. (2002, no pagination)

Ironically, Stretton's rebuttal makes the very point he is denying. Surely he is correct that one ought not to respect people who, when given the opportunity to hone and nurture certain gifts—e.g., intellectual skill and athleticism—waste these potentials in a life of sloth and depravity. But the "respect" not owed here is not the respect about which Lee and I write when it comes to beings who are rational moral agents by nature because of their basic capacities. The respect about which Stretton writes is a second-order respect that is *earned* by persons who properly employ and nurture those natural talents that are not equitably distributed among human beings (and thus come in degrees and thus cannot be the basis of intrinsic value). But the withholding or lavishing of that respect on a particular being makes sense only in light of the *sort of being* it is by nature, that is, a being who has certain intrinsic capacities and purposes that, if prematurely disrupted by either its own agency or another agent, results in an injustice. So, the human being who wastes his talents is one who does not respect his natural gifts or the basic capacities whose maturation and proper employment make possible the flourishing of talent

and skill. That is, the notion of “proper function” (Plantinga, 1993), coupled with the observation that certain perfections grounded in basic capacities have been impermissibly obstructed from maturing, is assumed in the very judgment one makes about human beings and the way by which they should treat themselves (as in the case of the lazy person with natural gifts offered by Stretton) or be treated by others (as in the case of the unborn in abortion).

IV. IS THE EARLY EMBRYO A WHOLE SUBSTANCE?

Professor Lee points out in his article that there has been a renewed interest in the biological question in the abortion debate, with some thinkers arguing that the early embryo is not a whole substance (2004a, pp. 7–31). In this section, I want to address in greater detail the arguments for this position that Professor Lee briefly covers and/or alludes to in his piece.

A. Argument from Twinning, Recombination, and Cellular Totipotency

Some argue that because twinning (the division of a single conceptus into two), and perhaps recombination (the reuniting of two conceptus into one conceptus), may occur roughly within the first two weeks of pregnancy, an individual human being is not present until twinning and recombination are no longer possible.⁷ Moreover, because the very early embryo consists of totipotent cells, any one of which could be detached from the cluster and become an individual human being in its own right, some thinkers argue that until the cells are differentiated and lose their totipotency,⁸ the embryo, though genetically human, is not an *individual human being*. According to Thomas Shannon and Allan Wolter:

Because of the possibility of twinning, recombination, and the potency of any cell up to gastrulation to become a complete entity, the particular zygote cannot necessarily be said to be the beginning of a specific, genetically unique individual human being. While the zygote is the beginning of a genetically distinct life, it is neither an ontological individual nor necessarily the immediate precursor of one. (1990, p. 612, as quoted in Lee, 1996, p. 91)

Norman Ford suggests that “the early embryo is really a cluster of distinct individual cells, each one of which is a centrally organized living individual

or ontological entity in simple contact with the others enclosed in the protective zona pellucida. It would be difficult to justify attributing the natural unity proper to a single ontological individual to the cluster of cells as a whole” (1998, p. 139, as quoted in Hui, 2002, p. 68). Thus, according to Ford, the embryo is not a single *being*, but rather, a cluster of *beings* held together by the zona pellucida, “a natural surface ‘coat’ that covers the embryo” (Hui, 2002, p. 238).

The objection assessed in this section may be put this way:

1. The early embryo is merely a cluster of totipotent cells that may divide into separate entities that may later recombine.
2. Any “entity” that may divide into separate “entities” that may later recombine is not an individual *being*.
3. Therefore, the early embryo is not an individual being.

This is a valid argument, for if both premises are true, the conclusion follows. However, there are good reasons to reject both premises, which means that the argument is unsound. Concerning the second premise—any “entity” that may divide into separate “entities” that may later recombine is not an individual *being*—it is clearly not true. Lee offers as an illustration, the flatworm, a being who has the potential to result in two flatworms if it is cut in two. Lee explains:

The reason the division does not simply result in death seems to be that the parts of the flatworm have the capacity to de-differentiate. This fact surely does not imply that prior to the division the flatworm is merely an aggregate of cells or tissues. It simply means that the parts of the flatworm have the potential to become a whole flatworm when isolated from the present whole of which they are parts. Likewise, at the early stages of development of the human embryo the cells seem to be as yet relatively unspecialized and therefore can become whole organisms if they are divided and have an appropriate environment after the division. But that fact does not in the least indicate that prior to such an extrinsic division the embryo is an aggregate rather than a single, multicellular organism. (1996, p. 93, note omitted)

Simply because two conceptuses result from a split conceptus or one conceptus results from two conceptuses that recombine, it does not logically follow that any of the conceptuses prior to twinning or recombining were not whole substances (Varga, 1984, p. 65).

Recall the first premise: the early embryo is merely a cluster of totipotent cells that may divide into separate entities that may later recombine. But, as we shall see, there is good reason to reject the notion that the early embryo is merely a “cluster” of cells rather than an individual organism. I suspect the reason why it is tempting to think of the early embryo in this way is that its cells are totipotent and thus each has the capacity, if detached from the others, to develop into an individual human being. But it does not follow from the totipotency of the early embryo’s individual cells that he or she is merely a cluster of cells rather than an individual biological entity with integrated parts, a substance with its own intrinsic-directness. “[A]s the flatworm example shows,” writes Lee, “a totipotency of a part does not show that *prior to the division* the part is not functioning as a part” (1996, p. 95). What evidence is there for the early embryo’s unity as a being?

First, totipotent cells do not detach from the embryo willy-nilly; they detach for a reason, either by a force external to the embryo (e.g., a scientist who intentionally splits an embryo or detaches one of its totipotent cells) or perhaps by something intrinsic to the entity itself. If the former, then the divided embryo is like the split flatworm, a being whose totipotent cells were detached by an outside force. But this clearly does not mean that either the embryo(s) or the flatworm(s) is (are) not unified being(s) before or after the artificial detachments. After all, suppose that science one day is able to take one of my skin cells and make it totipotent and provide an artificial womb for the cell so that it grows, develops, and after nine months becomes an adopted baby. Would such a scenario—an artificial detachment and manipulation of my cell so that it becomes totipotent—prove that I am not a unified being? If not, why would the artificial detachment (minus the manipulation because it is unnecessary) of an early embryo’s cell prove that it is not a unified being simply because all its cells are totipotent?

Concerning the latter—that there may be something intrinsic to the entity itself that results in the detachment of one of its totipotent cell—physician and theologian Edwin Hui points out that there is no intrinsically directed potential for monozygotic twinning in every conceptus. (Twinning, of course, may occur as a result of an early embryo being manipulated artificially, as noted above). That is, twinning is not “always present in the normal conditions of embryogenesis” (2002, p. 69). It is, after all, quite rare, “occurring in only three or four out of a thousand births.” Nevertheless, writes Hui, even though “[s]cientists are still uncertain as to why it actually takes place,” they “do know that some unknown agents seem to be needed to break down the intercellular bonds that normally hold the cells together

as an individual organism” (2002, p. 70). Because there is strong evidence that monozygotic twinning has a genetic cause (hence, it runs in certain families), it seems that some zygotes have a basic duality prior to their splitting—an intrinsically directed potential—that is not present in virtually all other zygotes. Thus, according to Hui, “the two beings that emerge as twins are in actuality two from conception, although in a ‘latent’ form” (2002, p. 70, citing Iglesias, 1987, p. 69).

But even if every early embryo were to possess an intrinsically directed potential for twinning—which may be triggered by some external stimulus—it would not follow that the early embryo is not a unified organism. It would only mean that the human being, early in her existence, possesses a current capacity that becomes latent after a certain level of development, just as some latent capacities become current later in the human being’s existence (e.g., the ability to philosophize).

Second, the early embryo, though consisting of totipotent cells, behaves like a single organism with an intrinsic goal-directedness for which its cellular parts interact and communicate with one another *unless* one of the cells is separated from the whole. There are several reasons to believe this is the case.

1. If the early embryo were not a unified organism, Benedict Ashley and Albert Moraczewski point out, the totipotent cells of the embryonic cluster “should each develop into a mature organism.” But because “they do so only if they are *separated* from the others,” it follows “that at least some interaction is taking place between them within the zona pellucida which restrains them from individually developing as *whole* organisms and normally directs them collectively to remain *parts* of a single organism continuous with the zygote” (1994, p. 49, as quoted in Lee, 1996, p. 98).
2. The zona pellucida as well as other embryonic tissues, Anthony Fisher writes, are “formed by the embryo, usually with its genetic constitution, and for its sole benefit and use, and are indeed its organs; they are clearly not the mother’s organs, nor a tumor, nor some alien third organism living symbiotically with mother and embryo” (1991, p. 60, as quoted in Lee, 1996, p. 96). Lee points out that “such activities—formation of organs for the benefit of the whole—constitute the defining trait of organisms” (1996, p. 96).
3. Although the embryo consists entirely of totipotent cells after its first cell divisions, “genetic restriction of the cells [i.e., cell differentiation] begins after day five, at the blastocyst stage” (Lee, 1996, p. 96). However, what is significant in terms of the present discussion is that “the

evidence also shows that the time” when this cell differentiation “begins is determined from within by a ‘clock mechanism’ intrinsic to the developing embryo” (Lee, 1996, p. 96). Ann McLaren explains:

There appears to be an inbuilt “clock” in the time of blastocyst differentiation. When cleavage is delayed or arrested, or when the number of cells in an embryo is reduced artificially, the secretion of blastocoelic fluid occurs at approximately the same time as intact blastocysts. The “clock” is not necessarily related to chronological age, and it could be provided by the number of nuclear cytoplasmic divisions in the embryo. The “clock” appears to be set and, if development is delayed, the embryo makes up for the delay later. (1982, pp. 682–683, as quoted in Lee, 1996, p. 96)

This seems to show that the early embryo is a single being whose parts, triggered by an intrinsically-directed “clock mechanism,” work in concert with one another for the progression, development, and continued existence of the substance as a whole (Lee, 1996, p. 96).

4. Other confirmation of the early embryo’s substantial unity includes the fact that its cells function “in distinct ways even from the two-cell stage,” such as when compaction occurs on day three,⁹ and the fact that “even before compaction, the positional differences between the cells is important, the top from the bottom, the right from the left, even though this differentiation is reversible” (Lee, 1996, p. 97, citing Ashley, 1992, pp. 167–168). Moreover, according to developmental biologist Michael Buratovich, “the blastosmeres [the totipotent cells of the early embryo] are held together by tight junctions and gap junctions, which allow cells to communicate with each other . . . By the eight-cell stage the cells are very tightly bound to each other. These cells are talking to each other in complex and wonderful ways. They are totipotent because they need to be—how else are they going to make everything from skin to sperm?”¹⁰

The significance of these activities should not be missed: they show that the cells of the early embryo, though totipotent, are functioning in ways consistent with their being constituent parts of a unified organism. That is, the cells function in concert to unfold what the early embryo’s intrinsically directed nature has apparently instructed it to do. The unfolding is orderly and goal-directed, with the end being the continuing development and subsistence of the embryo itself as a whole (Lee, 1996, pp. 94–98).

B. The Zygote Relies on Maternal Molecules to Initially Direct its Development

Some thinkers have argued that the zygote is not a unified substance at conception because in the initial stages of cell division it does not rely on the informational content of its own genes to direct its development. Rather, the mother's messenger ribonucleic acid (mRNA), inherited from the ovum responsible for the zygote's existence, directs its development until the four- to eight-cell stage (about seventy-two hours after fertilization). After that time, the zygote's own genes are activated and it begins to develop in accordance with the information encoded in those genes.¹¹ Consequently, "the zygote does not possess sufficient genetic information within its chromosomes to develop into an embryo that will be the precursor of an individual member of the human species" (Shannon & Wolter, 1990, p. 608, relying on Bedate & Cefalo, 1989). There are several reasons why this argument is unconvincing.

First, it rests on the faulty assumption that an entity is not a unified substance unless it relies exclusively on its own chromosomes entirely throughout its existence. But why should we believe that's true? For chromosomes, like hearts, fingers, and lungs, are parts of the organism. Granted, chromosomes are important parts, parts that help direct the growth and development of the organism, and whose information content helps shape some of the unique features and characteristics that make up a mature human being. But, if these parts are present but not active, it does not follow that the organism is not a unified being if their working is not necessary at that point in its development. If, for example, hearts, fingers, and lungs cease working and are replaced by artificial versions of them, the organism remains the same though undergoing change. However, it's not as if the zygote or the early embryo does not have, or has lost, its chromosomes; it always had them from the moment it came to be. They just have not been activated yet, for they are not required to be activated for the organism's development at that time in its existence, just as the zygote or early embryo does not need a central nervous system at that time, though it certainly needs it several years later when it is a toddler. Consequently, a more fruitful way to look at the zygote or early embryo is to see it as a unified being with its own genetic structure whose nature requires that in its initial stages it use the maternal mRNA to direct its development. That is, the zygote or early embryo is a *living organism*—a substance—with certain powers and properties, including the capacity to be acted upon by maternal molecules in order to facilitate its intrinsically directed purpose for continued development and subsistence of itself as a *whole substance*.

Second, the central argument for this objection is unsound. The argument goes like this: because a biologically complete zygote could just as well develop into a complete hydatidiform mole or teratoma as it could a blastocyst, the zygote is not intrinsically directed to develop into a mature human being (Bedate & Cefalo, 1989, p. 644). This is so because a zygote's continued development "depends at each moment on several factors: the progressive actualization of its own genetically coded information, the actualization of pieces of information that originate *de novo* during the embryonic process, and exogenous information independent of the control of the zygote" (Shannon & Wolter, 1990, p. 608, as quoted in Hui, 2002, p. 64). But this argument is based on a false premise. As Antoine Suarez points out, complete hydatidiform moles and teratomas do not result from normal, biologically complete, conceptions but arise from entities that are in fact flawed or deficient "fertilizations," and thus have no intrinsically directed capacity to develop into a normal human being.¹²

Nevertheless, Professor Lee has argued that "even if it were true that some information is received from maternal molecules, this would not show that the preimplantation embryo was not a complete human individual" (1996, p. 101). He goes on to illustrate this point by showing that the human organism, like every other organism, operates in such a way throughout its existence that it interacts with, and is affected by, other entities without ceasing to be itself:

There is no reason to expect that *all* of the future features of the developing organism should be already determined by its internal genetic make-up. Environmental conditions, which could include maternal molecules within the uterus, can determine many of the future characteristics of the developing organism. Indeed, throughout his or her life, many of this organism's important characteristics will arise from interaction between his or her own internal power and the environment. If informational factors are received from maternal molecules, still, how this information fits within the overall development of this organism is determined from within the organism's own directed growth. Thus, if any information is received from maternal molecules, it does not determine the primary organization and direction of the multitude of cell differentiations and acquisitions and uses of nutrition occurring in this organic system. That primary organization comes from within the embryo itself. (1996, p. 101, citations omitted)

Consider another illustration. When one contracts pneumonia, one does not have within one's chromosomes the necessary components to fight off the disease. That is why one takes antibiotics in order to kill the

microorganisms that infect the lungs. Thus, without the antibiotics, one may die. But if one is no less a whole human organism, or substance, simply because one relies on the antibiotics for one's survival and continued development, the zygote or early embryo is no less a whole human organism simply because it relies on maternal molecules.¹³

V. CONCLUSION

This essay's purpose is to complement the case offered by Professor Lee in his article. I defend the claim that the substance view of persons has more explanatory power than its rivals. I offer for this claim two reasons, as well as several replies to two arguments employed to support the notion that the early embryo is not a unified substance. Although the substance view is one held by many Christians, and especially those in the Thomistic tradition, it is offered in this article as an account of human personhood based on reasons publicly accessible to those who are outside of that tradition.¹⁴

NOTES

1. Much of the reasoning in this paper has been influenced by, and has benefited from, the works of Patrick Lee, J. P. Moreland, and W. Norris Clarke, which are appropriately cited throughout this essay. Also, several conversations with Robert P. George and Hadley Arkes helped hone my case.
2. For a fuller explanation of the distinction between first-order and second-order capacities, see J.P. Moreland in Moreland & Rae, 2000, pp. 202–4.
3. Carol Kahn (1989) offers this grisly proposal in her essay, "Can We Achieve Immortality?: The Ethics of Cloning and Other Life Extension Technologies."
4. See, for example, Dworkin, 1993, pp. 11–15.
5. The example of a dog is mine, not Stretton's.
6. Lee writes: "[T]hough not all arguments starting from thought-experiments are useless, this one is circular. According to it, human A's cerebrum is transplanted into nonhuman animal B's body. I don't think our intuitions are clear about what to say here. . . . One could say [that] B continues to exist but now becomes rational. This is Stretton's interpretation, because (I think) he already believes that being rational/free is in every sense an accidental characteristic" (2004c, p. xx).
7. This early embryo is sometimes called a "pre-embryo." This term virtually adds nothing to the conversation, even though it is widely used in political debates over the moral and legal permissibility of human cloning, embryo experimentation, and in-vitro fertilization (IVF). The reason for this term's popular use, as abortion-choice advocate and Princeton biology professor, Lee Silver, candidly admits, is to soften the general public's natural inclination to think of the early embryo as an immature human being rather than a being that is not yet human: "I'll let you in on a secret. The term pre-embryo has been embraced wholeheartedly by IVF practitioners for reasons that are political, not scientific" (1997, p. 39). Thank you to Scott Klusendorf for bringing Silver's work to my attention.
8. As Thomas Shannon and Allan Wolter write, "Maximally, one could argue that full individuality is not achieved until the restriction process is completed and cells have lost their totipotency" (1990, p. 620, as quoted in Lee, 1996, p. 94).

9. Lee, 1996, p. 97. Lee quotes an embryology textbook's description of compaction: "Starting at the eight-cell stage of development, the originally round and loosely adherent blastomeres begin to flatten, developing an inside-outside polarity that maximizes cell-to-cell contact among the blastomeres at the center of the mass. As differential adhesion develops, the outer surfaces of the cells become convex and their inner surfaces becomes concave. This reorganization, called *compaction*, involves the activity of cytoskeletal elements in the blastomeres" (Larsen, 1993, p. 19, as quoted in Lee, 1996, p. 97).
10. Personal email correspondence from Michael Buratovich to Francis J. Beckwith (12 June 2003). Dr. Buratovich (Ph.D. in developmental biology, University of California, Irvine) is Assistant Professor of Biology, Spring Arbor University (Michigan).
11. Bedate & Cefalo, 1989, pp. 641–5. I also rely on Hui's presentation of this argument and his explanation of the scientific facts undergirding it (Hui, 2002, p. 63–65).
12. See Suarez, 1990, pp. 627–35. It should be noted, as Patrick Lee indicated to me in private correspondence (email from Patrick Lee to Francis J. Beckwith, 28 January 2004), that there is a difference between complete hydridiform moles and partial ones. The latter, unlike the former, in some cases do contain an embryo, but cannot be implanted because of a developmental problem.
13. I owe this illustration to Michael Buratovich.
14. Several individuals read either this whole essay or portions of it and offered to me their valuable insights and suggestions: Patrick Lee, Mike Buratovich, Jonathan Wells, J. P. Moreland, John Lee, and Scott Klusendorf. I wish to thank them for their wisdom and generosity.

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