Strange Bedfellows? Common Ground on the Moral Status Question

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When does a developing human being acquire moral status? I outline three different positions based on substance ontology that attempt to solve the question by locating some morally salient event in the process of human development question. In the second section, I consider some specific empirical objections to one of these positions, refute them, and then show how similar objections and responses would generalize to the other substance-based positions on the question. The crucial finding is that all the attempts to answer the question that involve substance ontology need to appeal to dispositions.

Keywords: *abortion, infanticide, moral status, personal identity, stem cell research, substance ontology*

I. INTRODUCTION

At what stage in its development does a human embryo acquire moral status? This is *The Moral Status Question* (MSQ). The question is a fundamental one for bioethics. One's answer to the question will inform one's position on such weighty matters as the permissibility of embryonic stem (ES) cell research, in vitro fertilization, abortion, and infanticide, among others. A plausible answer to MSQ, if one exists, must identify the following:

- First, some morally salient property or properties **P** that confer moral status upon persons.
- Second, some nonarbitrary, empirically observable event in development at which the developing embryo undergoes a qualitative change from not instantiating **P** to instantiating **P**.¹

I will call such putatively nonarbitrary, empirically observable events at which a qualitative shift happens *Morally Salient Developmental Events* (MSDEs) and I will say an author “makes an MSDE claim” if that author answers MSQ by appealing to MSDEs. But can this empirical burden be met? Are there really such principled scientific grounds upon which such distinctions can be made? The goal of my paper is not to definitively prove there are such grounds. Instead, my aim is to show some objections to the idea there are such grounds to be mistaken.

In the first section of this paper, I briefly canvass the different MSDE claims authors in the contemporary literature have made and find some surprising commonalities among them. In the second, I consider three empirical objections to MSDE claims. These objections, I shall argue, generalize to all versions of MSDE claims, and so authors who make such claims should take them seriously. But, proponents of MSDE claims have a way out, because these objections can be overcome by appealing to dispositions.

II. A TAXONOMY OF MSDE CLAIMS

It is no surprise that many authors make MSDE claims. Those who have done so include [Singer \(1993\)](#),² [Smith and Brogaard \(2003\)](#),³ [George and Gómez-Lobo \(2005\)](#), [Damschen, Gómez-Lobo, and Schönecker \(2006\)](#), [George and Tollefsen \(2008\)](#), and [Baker \(2000, 2005\)](#). What is surprising is the variety of different conclusions these authors have used MSDE claims to support.

For example, George and Tollefsen think the MSDE is fertilization and from this they conclude that ES cell research is ethically impermissible and should be legally prohibited ([George and Tollefsen, 2008](#), 208–9). For Singer, however, the morally salient property is self-consciousness, and since newborn infants are not self-conscious, therefore ‘the grounds for not killing persons do not apply to infants’ ([Singer, 1993](#), 171).⁴ Strange bedfellows, indeed.

The stark contrast between these two extreme positions suggests two interesting lessons about MSDEs:

- First, we can taxonomize a surprising number of different answers to MSQ in terms of two factors: the properties different authors think are morally salient and the events at which authors think the developing embryo comes to instantiate those properties. Such a taxonomy elucidates the conceptual issues involved by revealing just where the disagreements lie and makes clear how empirical claims are relevant to the debate.
- Second, from the divergence of answers to MSQ, one might be tempted to infer that there is no consensus—and so *a fortiori* no progress—on the issue in the literature. However, the existence of such a taxonomy

belies a more fundamental methodological consensus about what a good answer should look like.

In order for an MSDE claim to act as a premise in an argument for some solution to MSQ, the event chosen must bear some relationship to one's theory of what it is that makes persons morally valuable. Therefore, the choice of MSDE will fall out of one's theory of personhood. Consequently, we can categorize various kinds of MSDE claims in terms of the different theories of personhood that give them rise. There are at least three theories of personhood that various authors have invoked in attempting to answer MSQ: psychological theories, animalist theories, and constitutionalist theories. In what follows, I will discuss each of these three theories, identify a few subtypes, and briefly assess some arguments for and against them.

III. PSYCHOLOGICAL THEORIES

One theory of personhood one might leverage to answer the MSQ is a psychological theory. On this theory, what it is to be a person is to be the subject of certain psychological states. For instance, Peter Singer takes the morally salient psychological state to be self-consciousness. On this view, therefore, the MSDE will be the achievement of self-consciousness. One classical psychological test for self-consciousness is the ability to recognize oneself in a mirror, and so the defender of a psychological theory of personhood might use the ability to recognize oneself in the mirror as a litmus test for moral status.⁵ Singer's choice of MSDE is not arbitrary—it arises from a conceptual position about the nature of personhood and some observable, empirical biological (or perhaps psychological) facts. Therefore, Singer's position adequately fulfills both the conceptual and empirical tasks an answer to MSQ requires. Further, Singer's position does give him precisely the theoretical resources to address a variety of applied ethical topics. For Singer, ES cell research, abortion, and infanticide are all permissible because a developing human being is not a person until it achieves self-consciousness ([Singer, 1993](#)).

IV. CONSTITUTIONALIST THEORIES

A second view one could take on personhood is Lynne Rudder Baker's constitutionalist view. According to Baker, a person is constituted of a human organism but is not identical to it ([Baker, 2000, 2005](#)). On Baker's account, the defining mark of personhood is not the possession of consciousness but merely the weaker property of possessing a first-person perspective. Baker admits that some other primates have rudimentary first-person perspectives similar to those of newborn human infants; however, she categorizes infants

as persons in virtue of the fact that their rudimentary first-person perspectives are in the process of developing into full-blown, first-person perspectives (Baker, 2005, 33).

This theory of personhood allows Baker to say that the fetus before it has developed the rudimentary first-person perspective is not a person—and so abortion is permissible—but by the time of birth, the fetus does have a first-person perspective—so infanticide isn't. Baker can acknowledge some continuity between the fetus and the person—for the human organism that now constitutes me *was* once a fetus, even if I was not.⁶

V. ANIMALIST THEORIES

Psychological and constitutionalist MSDE claims are common in the literature, and their status as 'live options' for solutions to MSQ is obvious. However, one can also build a MSDE claim around an *animalist* theory of personhood as well. On this view, to be a person is to be a particular human animal (Olson, 1997). According to animalists, the MSDE will be the event at which one becomes a particular human animal.

I will belabor my exposition of animalist theories for two reasons. First, despite the existence of capable defenders of animalist theories, many thinkers still do not regard such theories as live options in the contemporary debate, based on facile objections. Second, there are actually a number of quite different animalist theories that could be used to support an MSDE claim, which should be carefully distinguished from one another.

Prima facie, there are two plausible candidate MSDEs on an animalist theory of personhood, both of which have defenders: fertilization and gastrulation (the event after which the embryo can no longer divide).

VI. THE FERTILIZATION VIEW

Proponents of the fertilization view include George and Gómez-Lobo (2005); George and Tollefsen (2008); Damschen, Gómez-Lobo, and Schönecker (2006); and Gómez-Lobo (2004). These authors argue that because an individual human animal comes into existence at the fertilization of the ovum, that new individual human animal is a person who possesses moral status. George, Tollefsen, and Gómez-Lobo notably argue for the moral status of the developing embryo on the grounds of the transitivity of identity. In other words, they argue that since I (the author of this paper) am identical to a human organism and that organism is diachronically identical to a fertilized embryo (many years ago), therefore I *was* that fertilized embryo, by the transitivity of identity. And since the fertilized embryo already was identical to a person, it also possessed moral status.

The fertilization view and this transitivity argument are both controversial. I do not necessarily endorse either, but some of the common objections to

them are flatly wrong. I will briefly discuss and defeat two such objections because the fertilization view deserves to be taken seriously as a contender theory.

The first objection is an argument against the fertilization view that turns on the concept of divisibility. Brown (2007, 208) has a lucid presentation of this kind of objection.⁷ He claims that because the conceptus is divisible, it is not an individual, but rather a set of objects, like a second-grade class. Therefore, according to Brown (Gómez-Lobo, 2004), proponents of the transitivity argument like (Gómez-Lobo, 2004) are guilty of a category mistake. Before gastrulation, the embryo is still potentially divisible and hence not one individual unit yet. And, therefore, says Brown,

I can no more ask whether I am a two-cell, four-cell or eight-cell embryo than I could ask if I am my second grade class in elementary school. I could be a member of that class but it is logically impossible that I be identical to a collection that has me as a proper part. (Brown, 2007, 608)

But it is Brown who has committed the category mistake. It is not possible for me to be identical to a second-grade class because a second-grade class is a set, that is, a kind of abstract object, and I am a concrete entity.⁸ But embryos, even pregastrulation embryos, simply cannot be *abstracta* because *abstracta* do not occupy space, have mass, or exercise causal powers, and pregastrular embryos clearly do all three.

The mistake at the heart of Brown's argument is his assumption that divisibility leads to multiplicity. To say that something is "divisible" is just to say that it is capable of being divided. Brown must be assuming a premise like "if x is capable of being divided, x is not an individual." But this assumed premise is patently false.

Take David, a clay statue sitting on my workbench, as an example. David is capable of being divided. I could take my knife and cut him in two, and I could do this in many ways. I could slice him into two halves from top to bottom, from left to right, or from front to back. Still, the fact that I *can* divide David does not mean that David is not an individual. I do not have two different lumps of clay until I make an *actual*, and not merely potential, cut. If potential divisibility leads to an *actual* multiplicity of entities, then there are as many distinct objects on the table as there are potential ways to cut the statue. But this is absurd.

Or consider another case. Amoebae reproduce by division into identical daughter cells, so it is true of an amoeba that it is divisible. And further, it is clear that the amoeba is an individual, concrete object, not a set. But, of course, human embryos are just like amoebae in this sense. Hence, if the amoeba's divisibility does not provide grounds for denying that the amoeba is a particular, concrete individual, neither will the human embryo's divisibility provide grounds for denying that it is a particular, concrete individual. So, this objection to regarding fertilization as an MSDE fails. Hence, the divisibility objection fails.

A second kind of objection to the fertilization view claims the pregastrular embryo and the adult human being have different essential properties, and hence an adult human cannot be the same substance as a zygote.

For instance, an anonymous reviewer of an earlier version of this paper made this kind of divisibility argument by claiming that the fact that a pre-gastrular embryo “can both split into two or more embryos or combine with another into a chimeric embryo, shows that it cannot be the same substance as the mature human being, or even the implanted embryo or post-natal human being that develops from it: for human beings are substances whose bodily individuality is neither splittable nor fusable, except by destroying it.”⁹ Others who have made similar objections include Brown, who writes,

Human beings are multi-cellular, sexually reproducing animal life forms ... [whereas] the zygote is a unicellular individual whose haploid genotype contributes little to the cytoplasmic processes that result in qualitatively identical offshoots. (Brown, 2007, 610)

Both the anonymous reviewer and Brown appear to be endorsing an argument such as follows:

- (1) Zygotes have property **P**.
- (2) Adult human beings do not have property **P**.
- (3) Therefore, a zygote and an adult human being cannot be numerically the same organism.

For the anonymous reviewer, **P** appears to be something like “is able to remain numerically identical through division,” whereas Brown suggests two different possible values for **P**, namely, “is unicellular” and “is capable of sexual reproduction.”

Either way, the argument is invalid. To see that it is invalid, consider the following analogous argument whose premises are true, but whose conclusion is clearly false:

- (1*) Caterpillars do not have wings.
- (2*) Adult butterflies have wings.
- (3*) Therefore, a caterpillar and an adult butterfly cannot be numerically the same butterfly.

The argument in (1)–(3) and the analogous argument in (1*)–(3*) both fail for the same reason. The reason is that the arguments infer a difference in substance from a difference in the nonessential properties a living organism has at different points in its life cycle. The only way to amend the arguments to make them valid would be to give some good reasons to think that the properties that pertain to the zygote qua zygote are essential properties of the kind of thing it is. That is, they would have to argue something like:

- (1**) Zygotes have property **P** essentially.

- (2**) Adult human beings do not have property **P** essentially.
 (3**) Therefore, a zygote and an adult human being cannot be numerically the same organism.

Arguments (1**)–(3**) are valid, but neither Brown nor the anonymous reviewer give any good reason to think these premises are actually true. It is a tautology that a unicellular organism is unicellular, but this furnishes no evidence that the unicellular organism is *essentially* unicellular.

To see why I say this, recall that for the substance ontologist there is a difference between *phase* sortals such as “infant,” “pupa,” “sapling,” and “adult” on the one hand and *substance* sortals such as “human being,” “butterfly,” “oak tree,” and the like on the other. Only those properties that belong to a thing in virtue of its substance sort are essential to the thing. Thus, all infants are humans, and they have some of their properties qua human, and others qua infant. The properties an infant has qua infant (such as having a partially cartilagenous skull) are *nonessential* properties, and thus one and the same organism can survive the ossification of the skull by remaining human, even though ceasing to be an infant. Armed with this distinction, the proponent of the fertilization view can persuasively argue that all of the properties Brown and the anonymous referee mention are mutable, nonessential properties that belong to a human organism at different phases in its career, rather than essential properties of some completely different kind of substance.

The zygote qua zygote is unicellular, and the adult qua adult is multicellular, but “zygote” and “adult” are both just phases of the same substance sortal, “human.” A human being qua human is neither multicellular nor unicellular, *pace* Brown.¹⁰

Brown and the anonymous reviewer cannot simply *stipulate* that multicellularity is an essential feature of being human without begging the question against the substance ontologist. The only viable response left¹¹ would be for Brown to argue that “zygote” is not a phase sortal of the substance sortal “human,” but a different substance sort of its own. But then Brown would have to explain how two human beings having sex generates a nonhuman substance that exists for a few days and is destroyed, leaving behind in its passing a human being. Such a story would beggar belief.

Brown’s other example, sexual reproduction, can be handled in a similar way, but it requires one additional comment. To get the example to work, Brown needs to say it is essential to humans to reproduce sexually and to zygotes to reproduce asexually. Clearly what Brown must have in mind as the essential feature is the *capacity* to reproduce sexually, otherwise only people currently engaged in sexual congress would count as humans. But if the claim is dispositional in this way, then there are no grounds for denying that capacity to zygotes.

Consider this question: Does a seven-year-old possess the capacity to reproduce sexually? The answer depends on what one means by a “capacity.”

Again, the difference between phase and substance sortals is important. If one means it is possible for the child qua child to reproduce, then obviously not. Nobody thinks puberty is the destruction of one organism and the generation of a completely new organism of a different sort. We take this to be a change of phase, not substance. Hence, the relevant sense of capacity here is different. I think what one means to ask is, “Does a child qua human have the capacity to reproduce sexually?” And here the answer is obviously affirmative. Given time, necessary resources, and the good fortune to develop normally, it is true of this child, right now, at the age of seven that he has that capacity.¹² Consequently, I see absolutely no prospect for arguing against the fertilization view on the grounds that the zygote and the adult human being are substances of different sorts.

VII. THE GASTRULATION VIEW

An alternative choice of MSDE for the animalist is gastrulation. [Smith and Brogaard \(2003, 66–67\)](#) and [Brogaard \(2006\)](#) take this line. They simply declare by fiat that if **A** is divisible into **B** and **C**, then “even in those cases where twinning does not occur, the [embryo] cannot be transtemporally identical with the human individual which exists after birth at any stage where twinning is still possible” ([Smith and Brogaard, 2003, 67](#)). This principle plays a crucial role in Smith and Brogaard’s argument that I began to exist at gastrulation, but I cannot see any good reason they give to adopt it. Perhaps they believe, incorrectly, that the divisibility arguments given above succeed in defeating the fertilization view. But the problem with the gastrulation view is not just that Smith and Brogaard fail to argue for it. As [Damschen, Gómez-Lobo, and Schönecker \(2006, 172\)](#) correctly observe, by making this an unargued premise of their view, Smith and Brogaard simply beg the question against the fertilization view.

Fertilization is an obvious, attractive candidate MSDE for an animalist, so a proponent of the gastrulation view needs to have some argument for his or her view. A proponent of the gastrulation view who sees the force of my objection to Brown might try to object to the fertilization view in this way:

It is all very well and good to remark that potential divisibility does not make for actual diversity, but what happens when the embryo does in fact divide? Say that **A** was the original mother embryo and **B** and **C** are distinct, qualitatively identical daughter embryos that result from the fission of **A** and subsequently grow up to be twins. Now either $\mathbf{A} \neq \mathbf{B}$ or $\mathbf{A} \neq \mathbf{C}$ or both. Hence, one cannot argue for the moral status of **A** by the transitivity of identity, because we do not know which of the twins, if either, is identical to **A**.

Perhaps this response captures something of the intuitive appeal of Smith and Brogaard’s view. However, it is not an adequate objection because the proponent of the fertilization view has two responses ready to hand: (a)

One might say that either $\mathbf{A} = \mathbf{B}$ or $\mathbf{A} = \mathbf{C}$ and we simply are not able to tell which is which. On this alternative, the life of one of these two daughter embryos began at conception, and the other began at division. But this is no bar against appealing to transitivity. The fact that we cannot tell which of the twins was identical to the original embryo does not mean that one of them was not. Hence, we can still run a transitivity argument for the moral status of $\mathbf{A}$. Or (b) the proponent of the fertilization view could also say that the division is the end of $\mathbf{A}$ and the beginning of two new embryos, each distinct from $\mathbf{A}$. Even making this concession, an animalist could still argue that the original embryo $\mathbf{A}$ was a person because $\mathbf{A}$ was surely some individual human organism and that is just what it is to be a person, according to animalism. And since all persons possess moral status, therefore $\mathbf{A}$ possesses moral status. This alternative argument makes no use of the transitivity of identity. To my knowledge, no one has yet taken this position in the literature. But the possibility of holding such a view suggests that the existing animalist arguments that appeal to transitivity have been making a claim stronger than strictly required for their view. This weaker animalist position has not yet been explored in the contemporary debate.

What I have done so far is this: I quickly surveyed psychological and constitutionalist theories and defended the viability of different kinds of MSDE claims. In the next section of the paper, I consider some empirical objections to the idea of making an MSDE claim at all.

VIII. TWO EMPIRICAL OBJECTIONS TO MSDE CLAIMS

Jason [Morris \(2012\)](#) argues against what he calls “substance-based” ethics. He has in mind approaches to MSQ that try to find some empirical event at which there is a qualitative change in the developing embryo. MSDEs would have to be such qualitative changes, so Morris’s objections are relevant to our considerations here. The most direct targets of Morris’s criticism are the gastrulation and fertilization views. He claims that regarding these events as qualitative changes is “not consistent with recent findings in reproductive and stem cell biology, including the discovery of the plasticity of early embryonic development and the advent of induced pluripotent stem cells” ([Morris, 2012](#), 331). On Morris’s account, all that the science of embryo development shows us is a series of reversible, quantitative changes.

Although the direct target of Morris’s criticism is animalist views, cognate worries arise about the empirical adequacy of other MSDE claims as well. Each of the MSDE claims we have discussed appears to face the same difficulty: the proponent of such a claim must find a qualitative change, but empirical science often finds only purely quantitative processes. Therefore, I will use Morris’s objections to the fertilization view as a test-case for how the proponent of an MSDE claim should handle cognate empirical objections.¹³

There are valuable lessons for the psychologist and the constitutionalist to learn from seeing how the animalist is able to respond to Morris.

Morris presents two arguments against the fertilization view. I will call these *The Distinction Argument* and *The Independence Objection*.

IX. THE DISTINCTION ARGUMENT

The goal of the first argument is to push the proponent of the fertilization view into a dilemma. Morris notes that since “we do not ascribe moral status to any single human cell except the one-celled embryo. Those who would assign moral status to the fertilized egg based on biological arguments must then explain what distinguishes this cell from every other human cell type” (337). Morris thinks that the cases cannot be split, and so defenders of the fertilization view like George and Tollefsen either have to say that the individual cells that compose a human body also have moral status—which is ridiculous—or have to admit that one-celled embryos do not have moral status. Let us call this *The Distinction Argument*.

George and Tollefsen have something to say to this. They deploy the concept of an “active disposition” to try to split the cases.¹⁴ They say that,

the human embryo possesses all of the genetic material needed to inform and organize its growth. The direction of growth is not extrinsically determined, but is in accord with the genetic information within it. ... Thus, [the embryo] not only possesses all of the necessary organizational information for maturation, but it truly possesses an active disposition to develop itself using that information. (George and Tollefsen, 2008, 53)

If George and Tollefsen are right, then they have exactly what is needed to respond to Morris. If an active disposition to develop into an adult human being is morally salient, then it makes sense to say that the one-celled embryo has moral status, whereas every individual cell of an adult human being in isolation lacks it.

It is important to note at this juncture that animalists are not the only ones who need to appeal to the notion of a disposition in their defense of MSDE claims. As Camosy (2008, 582) rightly points out, Singer thinks self-consciousness is required for personhood, but presumably he wants to say that people still remain persons while asleep, so he needs to say that it is not being actually, currently conscious that confers moral status, but rather the possession of an active disposition to consciousness that confers personhood.

Baker too distinguishes between a rudimentary first-person perspective, such as the apes could have from the kind of first-person perspective a toddler has on the grounds that the latter, but not the former, has an active disposition to develop into the full-blown first-person perspective of a person.

The possession of this active disposition is what is supposed to make infanticide wrong. Presumably, Baker too would need to parse the possession of this first-person perspective in dispositional terms. Nobody has a first-person perspective while asleep, and surely she doesn't think killing infants is okay, so long as they are asleep. What she must mean, then, is that it is the active disposition to have a first-person perspective that is morally salient. Hence, both Singer and Baker have to appeal to disposition in just the same way that George and Tollefsen do. Because answers to MSQ have to pass the test of empirical adequacy, Singer and Baker will have to confront the same explanatory task as George and Tollefsen. That is, all MSDE proponents have to explain what empirical events explain the distinction between the person who possesses the relevant disposition and the nonperson who does not.

Morris thinks that appealing to dispositions is insufficient to respond to the Distinction Argument, but he misreads George and Tollefsen. Morris makes clear that he takes an "active disposition" to be a "deterministic program." He says, apparently intending this as a criticism of George and Tollefsen:

The description of preimplantation development might leave the misleading impression that these early events are inevitable or determined. In fact, however, development is much more tractable than would first appear, and the early embryo is quite plastic. (Morris, 2012, 338)

Among the pieces of evidence, Morris cites in favor of the plasticity of development is the fact that ES cells can be manipulated by quantitative changes in the level of transcription factors. The unaltered ES cell is pluripotent. When placed adjacent to placental cells, the ES cell is capable of producing any necessary embryonic tissue, and hence capable of producing a viable mature adult human being. Further, the suppression of certain transcription factors removes the pluripotency of the ES cell and causes it to produce placental cells rather than embryonic cells. Morris takes these biological facts to be evidence that the embryo lacks an active disposition to develop itself.

However, George and Tollefsen need not deny any of this. The root of the problem is that Morris appears to be imagining George and Tollefsen's "active disposition" to development as a chain of indicative material conditionals where each prior developmental event was a sufficient condition for the next event. Pointing out the plasticity and reversibility of the events in early embryogenesis would genuinely cut against that kind of account. However, George and Tollefsen speak of the embryo's program of development as a "disposition" and dispositions are standardly expressed with subjunctive conditionals, not indicative conditionals.¹⁵

Take a piece of glass packed in shock-absorbing materials. The glass is fragile, which is to say it has the disposition to break when struck. However, when packed in the packing material, the sentence "if you strike the glass, it breaks" is false. What has happened here? Has the glass ceased to be fragile? No. Obviously, the glass retains the disposition, but the disposition is

prevented from becoming active by the intervening shock-absorbing material.¹⁶ In such a case, I will say that the shock-absorbing material “masks” the disposition. From this case, it is obvious that the glass’s disposition is not best thought of as the indicative conditional “if I strike the glass, then it breaks” but rather as the subjunctive conditional “if I were to strike the glass (under such and such conditions, including there being no packing material intervening), then the glass would break.” The logic of subjunctive conditionals is considerably different from the logic of indicative material conditionals, because subjunctive conditionals are counterfactual claims about what would be, if some situation were to obtain.¹⁷

Thus, George and Tollefsen’s claim that the embryo has an active disposition to develop itself is equivalent to:

Active Disposition. If it were the case that the embryo were in such and such a set of conditions (and there were no maskers), then the embryo would develop into an adult human being.

Because *Active Disposition* is a subjunctive conditional, it remains true even in those cases where there are blockers actually present. It is technologically possible to arrest the development of the embryo, and this acts as a masker that keeps the disposition from bringing about the result it is oriented towards. But even when so arrested, the embryo still has the active disposition to develop, just like the glass still has the disposition to break when struck, even when packed in shock-absorbing materials. Therefore, Morris’s objection that development is interruptible or reversible is no evidence that the embryo lacks an active disposition to develop itself.

Now, Morris might respond that this nice theoretical distinction still does not get George and Tollefsen off the hook, because an ES cell could be said to have the same disposition, since the ES cell can be manipulated in such a way that it can become a part of an embryo that then develops normally (for details see [Morris, 2012](#), 339).

However, this response is not apposite because there is a difference between being a whole and being a part. Wholes possess an active disposition intrinsically, but parts can possess them only extrinsically. David Lewis explains the point succinctly:

A sentence or statement or proposition that ascribes intrinsic properties to something is entirely about that thing; whereas an ascription of extrinsic properties to something is not entirely about that thing, though it may well be about some larger whole which includes that thing as part. A thing has its intrinsic properties in virtue of the way that thing itself, and nothing else, is. Not so for extrinsic properties, though a thing may well have these in virtue of the way some larger whole is ... If something has an intrinsic property, then so does any perfect duplicate of that thing; whereas duplicates situated in different surroundings will differ in their extrinsic properties. ([Lewis, 1983](#), 197)

In other words, whole organisms possess active dispositions intrinsically, whereas parts of organisms can be said to possess those same dispositions only in a derivative way. I, the complex whole human organism, have the disposition to live; my heart, which is but a part of that complex, does have the disposition, but only extrinsically.¹⁸ Likewise, the fertilized egg is a whole organism on its own and therefore has active disposition to develop itself intrinsically, where the ES cell has that same disposition extrinsically. Therefore, there is a principled distinction between the fertilized ovum and the ES cell, *pace* Morris.

In short, Morris's Distinction Argument against the fertilization view fails for two reasons. First, it fails because George and Tollefsen are not committed to the process of development being an irreversible chain of sufficient conditions. Second, because there is a principled difference that one can draw between the fertilized ovum and the ES cell, the former possesses the active disposition to develop intrinsically, where the latter possesses it extrinsically.

Because the other existing kinds of MSDE claims also need to have recourse to active dispositions, as I showed above, it is clear that Singer and Baker should take note. The lesson here is that the way to respond to empirical worries like Morris's Distinction Argument is to parse the active disposition talk in terms of subjunctive conditionals.

There is still a further question lingering. What is it that confers these active dispositions on objects? Providing a thorough analysis of the truth-makers of these dispositional claims is beyond the scope of this paper.¹⁹

X. THE INDEPENDENCE OBJECTION

Morris has a second objection to the fertilization view that also has broader significance for the other kinds of MSDE claims as well. I will call this *The Independence Objection*. The objection aims to undercut one important rationale for the fertilization view, by showing that one important argument in its favor is flawed.

The argument The Independence Objection aims to undercut goes like this: George and Tollefsen argue in favor of viewing fertilization as an MSDE on the grounds that at fertilization some new organism comes into existence that has its own unique genetic program and which exists independently of its mother and father. (Let us say that x is independent of y if and only if it is logically possible for x to exist without y .) The appeal of George and Tollefsen's argument is obvious. Animalists say that what it is to be a person is to be an individual human organism. It looks hard to deny that something that is both human and capable of independent existence is "an individual human being" in just the sense required.²⁰

Morris attempts to undercut this argument like so:

The distinction George and Tollefsen attempt to draw here is that between what developmental biologists call permissive and instructive environmental factors. ... We have come to realize, however, that there are no purely permissive factors. ... Cells routinely alter their gene expression profiles in response to different oxygen levels, different levels of nutrients, and so on. ... If such changes in genetic programming alter moral status, then the fetus is not internally determinate because the uterus instructs such changes. If such changes are not significant, then philosophers are not justified in classifying the introduction of embryonic precursor cells to placental precursor cells as a substance change. A further note: one of the main functions of the placenta is to release hormones that reprogram the expression profiles of cells in the mother. By the standard of George and Tollefsen, neither mother nor embryo is independent of the other. Clearly, there is no clear-cut distinction, no binary ontological divide, between independence and dependence. Arguments concerning internal determination do not, therefore, help distinguish the moral status of different developmental stages. (Morris, 2012, 340–1)

Again Morris reads George and Tollefsen as making a much stronger claim than they in fact do. The root of the mistake this time is that Morris has failed to distinguish the very weak notion of ontological independence from the considerably stronger notion of causal independence.

For an illustration of the difference, consider the difference between the way I depend on the oxygen in the room and the way a smile depends on a mouth. It makes perfectly good sense to say that if there were no oxygen in the room right now, there very shortly would not be any human beings here, either. But this connection is causal, not ontological.

It is conceptually possible for me to exist in a room without oxygen, even if in reality I could only do so for a short time. However, what it is to be a smile is to be the curvature of a mouth. Without a mouth, there is *a fortiori* no curvature of a mouth, so the presence of a smile in the absence of a mouth is a metaphysical impossibility, a contradiction in terms. We learn the former relation empirically, but we know the latter *a priori*. When Morris interprets George and Tollefsen's remarks about the independence of the fetus as claims about "instructive factors," he shows that he understands George and Tollefsen to be making the stronger, false claim that the embryo is *causally* independent of the mother. However, all George and Tollefsen's argument for the fertilization view requires is the much weaker claim that the embryo is ontologically independent of the mother. And, with the distinction between causal and ontological relations on the table, we can see that there are good reasons to suppose the embryo is in fact ontologically independent, just as George and Tollefsen say. Obviously, it is not part of the definition of an embryo that it exist in a womb, even though that is the natural order of things. Further, it is conceivable that we can remove the embryo from the mother and place it in a suitable artificial environment and it would continue to exist all the while. The relationship between the embryo and the mother is like the relationship between me and the oxygen in the room: it is

a causal, not an ontological dependence. Therefore, Morris's second objection is wide of the mark as well.

Again, The Independence Objection is aimed specifically at the fertilization view, but it has a broader significance for psychological and constitutionalist MSDE claims as well. To see why, consider what the problem is for George and Tollefsen. They have to explain why some entity is a substance independent of something else in its environment upon which it appears to be dependent. Proponents of psychological or constitutionalist views have an analogous burden, for they both hold that the person is a substance and that there is something else in the environment of the person upon which the person looks to be dependent, namely the living human organism. In other words, where George and Tollefsen have to defend their MSDE by showing that the embryo is not dependent on the womb, Singer and Baker have to defend their MSDE by showing that the person is not dependent on the human organism. Now one can see very easily ways in which that claim might appear problematic to an empirical psychologist. To deny that the person is dependent on the body appears to involve the same vicious regress into substance dualism that I have deprecated above.

However, again, the proponent of psychological or constitutionalist theories can reply to the objection by taking a page from George and Tollefsen's book. Distinguish causal from ontological dependence and the worry about substance dualism is mollified. On a psychological or constitutionalist view, one would surely say that the person is *causally* dependent on the human organism. But it is conceivable to replace the biological parts of a living human body with mechanical ones while keeping the human psychological capacities basically unchanged, which shows that the dependence is not ontological..

XI. CONCLUSION

The principal results I have argued for in this paper are the following:

- MSDE claims are a promising direction for future research in biomedical ethics.
- There are three broad families of such claims, psychological, constitutionalist, and animalist, all of which are live options.
- Proponents of these views have much in common: they all have to bear the burden of empirical adequacy.
- In order to bear that burden, they all need to appeal to active dispositions, which they should understand as subjunctive conditionals, and they all need to carefully distinguish ontological from causal independence.

NOTES

1. Coming to instantiate a morally salient property need not be instantaneous, of course. An event can be extended in time. At 1:00 p.m. I did not have a sunburn, but at 2:00 p.m. I did, so clearly a qualitative change occurred in the interim. But it does not follow from this that there is some instant *t* between 1:00 p.m. and 2:00 p.m. after which I was sunburnt and prior to which I was not. My getting a sunburn was one event, but it took some time.

2. This reading of Singer was suggested to me by Camosy (2008).

3. Smith and Brogaard would demur; they state explicitly that they are merely performing an exercise in ontology, not ethics (2003, 46). However, their demurral rests on the claim that it is not always wrong to kill a person. Yet, the existence of exceptions does not disprove the general rule, since those who approve of killing other people presumably approve of doing so only in tightly specified, exceptional circumstances. That is, they endorse a general rule against killing that includes some set of exception clauses like, "It is always wrong to kill a person *except* if (i) that person has committed a capital crime and been found guilty in a fair trial, (ii) that person is an enemy combatant in a war zone, (iii) etc." Crucially, any plausible set of exception clauses like (i)–(iii) must somehow refer to the person's having actively chosen or intended a certain action, on pain of legitimizing injustice. But none of the entities whose moral status is in doubt here, from the zygote to the toddler, are capable of choosing or intending in the relevant sense. So the general rule against killing them will remain in effect, and Smith and Brogaard's ontological theses will turn out not to be morally neutral after all. Hence, I count them among the proponents of MSDE claims, their explicit intentions to the contrary notwithstanding.

4. For sake of simplicity, I am treating moral status as all-or-nothing. Technically, Singer thinks that what is morally salient is the ability to have interests, and since the ability to have interests admits of degrees, so does moral status. However, since Singer thinks that the things that have the most interests (and therefore the highest degree of moral standing) are those that are self-conscious, I am treating him as holding that the attainment of self-consciousness is the MSDE. For more on considering moral status a matter of degree, see DeGrazia (2008).

5. However, note that the mirror test can produce false negatives, especially in nonhuman species whose primary sensory modalities are not vision. For details, see Asendorpf, Warkentin, and Baudonnière (1996). At any rate, it is clear that passing the mirror test is at best a *sufficient* condition for self-consciousness in humans, not a necessary one, otherwise Stevie Wonder would not count as a person, which is false. The reader who is still in doubt is encouraged to consult *Songs in the Key of Life*.

6. Baker's view of personhood suffers theoretical liabilities that go beyond the scope of this paper: if mental states supervene on physical states, but I am not identical to the physical organism that constitutes me, then it seems plausible that any psychological state I experience is also a psychological state the physical organism that constitutes me experiences. (To deny this would be tantamount to denying that the mental supervenes on the physical, which threatens relapse into substance dualism.) But if I am distinct from that physical organism, then something strange is happening. For if I have a pain, then so does the organism. If I harbor a suspicion, then so does the organism with which I am spatially coextensive. So it looks like we have two distinct thinkers, me and a human organism located at the same place and thinking qualitatively identical, but numerically distinct thoughts. For details, see Shoemaker (1999).

7. Smith and Brogaard endorse a similar position, as I shall discuss below. Stretton (2008) also seems to endorse this objection.

8. Someone could object that the second-grade class is the kids, not the set of the kids, and is therefore a concrete plural object. But this will not save Brown's point. For it is still a mistake to identify a singular object (me) with a plural object (my parts). If there is more than one member of the New York Knickerbockers, then I cannot, as a matter of logic, be identical to the Knicks. For the classical presentation of plural quantification, see Boolos (1984).

9. My thanks to the anonymous reviewer for drawing my attention to the difference between this kind of objection and the divisibility objection.

10. Somebody might wonder how this could be. Everything either has one cell or not, so how could the human qua human be neither? There is a category mistake here—every concrete object is either one-celled or not, but essences are not *concreta* in this way. Consider the parallel case of a triangle. Every triangle is equilateral, isosceles, or scalene. However, no triangle is equilateral qua triangle, because there are nonequilateral triangles.

11. Of course, Brown could just deny substance ontology in general. But that would be a rather different kind of point, and it would need much more argumentation. Brown wants to show that the fertilization view isn't possible, even supposing substance ontology to be true, but he has not made a convincing case for that claim.

12. This is because capacities are dispositions. Thus, when I say the child has the capacity to reproduce, this is analogous to saying of a cube of salt in the middle of the desert that it is soluble in water, which is true.

13. Morris thinks both gastrulation and fertilization are nonstarters as candidate substance-changes. However, due to constraints of space, I will only consider his objections against the fertilization view since I did not find the motivation of the gastrulation view convincing in the first place and I largely agree with Morris's objections against Smith and Brogaard.

14. I do not see that George and Tollefsen have said so explicitly, but I presume that the difference between active and passive dispositions is supposed to be the difference between what a thing does to itself and what is done to it by other things in its environment. Some examples: glass has a passive disposition to break that we call fragility. Salt crystals have a passive disposition to dissolve in water that we call solubility. But living organisms have an active disposition to maintain a certain internal temperature that we call homeostasis. Passive dispositions are activated by external objects, whereas an object's active dispositions are activated by the object itself.

15. The analysis of dispositions as subjunctive conditionals is controversial, but see [Steinberg \(2010\)](#).

16. This example is due to [Johnston \(1992\)](#).

17. For more on subjunctive conditionals, see the pioneering work in [Stalnaker \(1968\)](#) and [Lewis \(1973\)](#).

18. It will follow from what I have said here that hearts are not substances, *pace* Smith and Brogaard. Individual human beings are substances, but their parts are not. This claim is controversial, and space does not permit a full defense of it here.

19. One fruitful area of research for proponents of MSDE claims might be found in the concept of an "endogenously active mechanism," which philosophers of biology and neuroscience have been developing in a series of important papers. For some representative literature, cf. [Craver and Bechtel \(2006\)](#); [Wimsatt \(2006\)](#); [Bechtel and Abrahamsen \(2007, 2008, 2010\)](#); [Bechtel \(2011, 2012\)](#). I plan to explore the claim that endogenously active mechanisms are the truthmakers of the dispositional properties of living things more in a future paper.

20. The only way to deny the claim would be to endorse the view that there are some things that are not individual things, that is, good old-fashioned Platonic Realism.

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