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Not One, Not Two: Toward an Ontology of Pregnancy

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Maja Sidzinska

Abstract
	Basic understandings of subjectivity are derived from principles of masculine embodiment such as discreteness. But pregnancy challenges such understandings because it represents a sort of splitting of the body. In the pregnant situation, a subject may experience herself as both herself and an *other*, as well as neither herself nor an *other*. This is logically untenable—an impossibility. If our discourse depends on discrete referents, then what paradigms of identity are available to the pregnant subject? What could be the pregnant subject's ontology? Eric Bapteste and John Dupré offer the idea that organisms are processual beings. In their view, the ecological interrelationships between the organisms are defining, and render them dynamic processes, rather than stable things. Does Bapteste and Dupré's processual ontological account accommodate pregnant organisms, including pregnant subjects? Here, I suggest some criteria for an ontology of pregnancy. I test the processual account and determine whether it can accommodate the phenomenon of pregnancy. I find that a processual ontology captures a great deal about pregnant embodiment and is a significant improvement over Cartesian and anti-metaphysical accounts. However, in order to accommodate pregnancy, what we still need from an ontology is the inclusion of subjectivity.

Keywords: ontology, feminist, gravidity, natality, pregnancy, processual, process ontology, feminist metaphysics, metaphysics, process

Background and Introduction
	Imagine yourself pregnant. Are you still just yourself, but with an additional attribute? Are you simply "adjectived" by 'pregnant' as the dictionary suggests? Or does your pregnancy re-identify you, since there is potentially *another* there, within you? And if there is another there, can you still say that you are *you*? Imogen Tyler writes that her experience as a pregnant subject revealed to her the ways in which basic understandings of subjectivity are still derived from the principles of masculine embodiment such as self-containment, temporal stability, and singularity (Tyler 2000, 288). But about her subjective, pregnant situation, she says: "I am both one

and the other. And I am equally neither one nor the other" (290).[1] This is logically untenable—an impossibility. According to the traditional model of logic, subjects should not be able to simultaneously claim that they are *x* and *~x*.[2] However, to borrow Catharine MacKinnon's articulation, this "impossibility" is the methodological expression of such a subject's situation (MacKinnon 1983, 637). The very body of the pregnant subject calls the dichotomy of the subject-object relation into question, because, as Iris Marion Young noted, "she experiences her body as herself and not herself" (Young 2005, 46). The unity of one's subjectivity and one's objectivity (i.e., one's status as an object) frays because the body, in a sense, *splits*, or at the very least changes so fundamentally that it generates questions of identity in the pregnant subject. Thus it is unclear whether the pregnant subject is even representable as such (Tyler 2000, 289). After all, we take it for granted that a subject may not have two bodies, that a subject is not twice-embodied.

Historically, analytic philosophy has not even tried to represent pregnant organisms[3]—not in general, not in their capacity as subjects, and especially not in their capacity as simultaneous subjects and objects. And continental philosophy's efforts are only very recent relative to philosophy's long history. Part of what Tyler

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[1] In this context, "one" refers to the self, and "other" refers to the fetus. The same sentiment has been expressed by other philosophers, cited further on; I chose Tyler's words because they make the contradiction the most obvious, render its thesis and antithesis symmetrical, and show two different levels of contradiction (see Footnote 2).

[2] There are multiple contradictions that are suggested here, and a number of ways to represent them logically. Given that T stands for Tyler, and F stands for the fetus, the contradictions can be represented in the following ways. 1. [T = (T & ~T)] & [T = (~T & ~(~T))]. This logical sentence reflects Tyler's meaning in that it is saying that [(Tyler is both Tyler and not-Tyler). And (Tyler is neither Tyler nor not-Tyler)]. For an account of how the two conjuncts in (1) may not be equivalent, see Priest 2010; 2. [T = (T & F)] & [T = (~T & ~F)]. This logical sentence presumes that F is by definition something other than T; it clarifies that [(Tyler is both Tyler and the fetus). And (Tyler is neither Tyler nor the fetus)]; 3. T = 2 and T ≠ 2. This shows a mathematical contradiction that is also suggested by Tyler—that Tyler cannot be two things as well as not two things. I take Tyler's sentence to reference all of these contradictions. All logical contradictions are implied when Tyler describes her experience of pregnancy, and are accounted for by the criteria I offer below that ontological accounts must meet to allow for the [logical] existence of pregnancy.

[3] Although I often refer simply to *organisms*, what an ontology must allow for is [pregnancies in] self-aware organisms—organisms qua subjects. This point is elaborated below.

wonders is how pregnantly embodied subjects and/or objects can come to exist—to *be*—in philosophical discourse that depends on logical-masculinist principles of reasoning. In short, what could be their ontology?

We must take seriously Tyler's assertion that she is both the subject and object of her own pregnancy. Although the contradiction in question may be represented as "*She* is both one and the other. And *she* is neither one nor the other," taking Tyler's subjectivity seriously is necessary because she alone can testify to the state of her subjectivity both before and during her pregnancy, as well as compare the two. In this context, I take subjectivity to reference the state of her own cognition, her perspectivality, her [self-]consciousness—or whatever one's term of choice is for human self-awareness itself; for instance, it is the human pregnant subject alone who can testify whether or not her consciousness has "split in two" regardless of whether her body seems to have. Because of this, Tyler has ultimate epistemic authority about the way the phenomenon of her pregnancy impacts her subjectivity, her person—rather than someone "objective" as a result of his or her distance from the phenomenon. This should not be taken to mean that others may not have epistemic authority over other, especially physical, aspects of her pregnancy; that is, others may have epistemic authority over the organismal aspect of her pregnancy. Rather, it's that when it comes to questions of, for instance, "how many" a thing is—and in this case "how many" a pregnant subject is—others don't have access to the very thing that may shed light on the question, namely the subject's very subjectivity.[4]

But then how can we articulate the phenomenon of a pregnant organism under a methodology that, by speaking solely in terms of self and other, either defines the mother and fetus as mutually exclusive or collapses the two, as analytic philosophy would make us do?[5] How can we articulate the phenomenon of a pregnant organism under a scientific regime that doesn't allow its objects of study to know just what about them is being studied? It seems that some other methodology is required. If traditional accounts of the subject and/or object(s) will not do, what paradigms of identity are available to the pregnant organism? How can we attempt to represent pregnant organisms in general?

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[4] This suggests a definition of a human subject that I don't necessarily wish to subscribe to. It may or may not be the case that self-conscious subjectivity is what defines the human subject. But that is not what is at issue here. Any definition that acknowledges that a subject has a certain type of access to its own subjective cognitive processes that other subjects *that are not part of itself* lack, will do.
[5] This would be as a result of analytic philosophy's reliance on the three traditional laws of thought: the laws of identity, non-contradiction, and excluded middle.

In "Towards a Processual Microbial Ontology," Eric Bapteste and John Dupré offer a theory of organisms as *processes*—as processual beings (Bapteste and Dupré 2013). In their view, the ecological interrelationships between the traditional objects of biology are defining, and render them dynamic processes, rather than stable things. The thing-based account of the objects of biology relies on referencing specific moments in the life of an organism, usually moments that represent the mature phase of its life. The apparent stability of the objects of biology is maintained by various stabilizing influences or phenomena, such as homeostatic mechanisms, and so forth—but only up to a point. Does Bapteste and Dupré's processual ontological account of organismal being(s) accommodate the phenomenon of pregnancy and the possibility of a pregnant organism? Or is something more needed?

In this work, I present the two most relevant aspects of the processual account and determine whether it can accommodate the phenomenon of pregnancy. Can the pregnant being be a species of a processual one? I find that the processual ontological model accommodates a great deal of ontological information about pregnancy, but that ultimately, more work must be done to provide an adequate ontological theory that can completely account for pregnancy, particularly in self-aware organisms. This work must attend to the unique features of pregnancy, for instance its generative and transient nature—points I return to in my justification of the criteria for an ontology of pregnancy, as well as in the conclusion.

This paper is intended as an exploration of just one aspect of the ontological conundrum presented by Tyler. I will leave aside the phenomenological aspect of Tyler's line of questioning, as phenomenology's subject and ontology's object are rather coextensive here.[6] This approach does not collapse pregnancy's phenomenology and ontology. Rather, because of a subject's access to her pre-

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[6] In searching for an ontology of pregnancy, I aim to search for an ontology that is inclusive of both self-aware and non-self-aware organisms. The ontological model should be able to accommodate both. Simply put, it should be inclusive of organisms and persons, as explained in later sections of this work. I introduce the problem phenomenologically, which presumes personhood on the part of an organism, as that is the term in which Tyler frames the issue when she formulates the problem, as well as because the subjective awareness of pregnancy in combination with an internalized/automatic use of reason is required to give rise to or grasp the logical conundrum that a pregnant organism represents. The ontological question arises from Tyler's subjective experience of pregnancy because she suggests in her testimony that in some ways the boundaries of her subjectivity and the boundaries of her objectivity have remained the same, and in other ways they have changed. But a phenomenological exploration is reserved for another time.

pregnant state, she can see herself rather objectively once she knows she is pregnant. Put another way, her pre-pregnant state is a sort of "control" [state], to borrow a term from science, against which she can know the changes (or lack thereof) to her subjectivity relative to her embodiment, to her pregnant subjectivity relative to her pre-pregnant subjectivity, and to her pregnant embodiment relative to her pre-pregnant embodiment, rendering her impressions theoretically objective; she becomes the object of her own subjectivity in a different, perhaps deeper, sense than she was before. I can't think of any other phenomenon that brings about such a state of affairs, which is why I suggest that the ontology of pregnancy must flow in part from its phenomenology from the top, so as to be inclusive of the pregnancies of subjects. Although many phenomenological questions may arise as a result of the experience of pregnancy, not all of them have to do with issues of what one (the pregnantly embodied subject) *is*. Those questions are bracketed off in the interests of focusing on the ontological discussion.

The need to articulate pregnant being is recognized by such scholars as Luce Irigaray, Christine Battersby, Iris Marion Young, Talia Welsh, Elselijn Kingma, and of course Tyler, and is peripherally mentioned by a couple of others.[7] But overall, the ontology of pregnancy is hardly discussed and represents a deeply understudied area of philosophy. As we are all the products of pregnancy, this work has universal relevance.

Criteria for an Ontology of Pregnancy

In order to test whether Bapteste and Dupré's processual ontology can be used as a model that accommodates pregnant being, I will first spell out the conditions that a model must meet. Some of the conditions that follow are derived from feminist criticisms of traditional ontological accounts, for instance, Cartesian and anti-metaphysical ones. Cartesian ontologies are problematic because they pronounce reason and reality as isomorphic, where reason is the reason of a singular mind, and its material objects-to-be-known are clearly discrete (Lloyd 1984). The "neatness" of the male form, its well-defined boundaries, its symbolic self-containment and independence[8]—all of these are necessary to and paradigmatic of the practice of reason, and hence to the traditional identity principle that reason relies upon.

Even though philosophy generally may have moved on from simplistically Cartesian metaphysics of the self, for the most part, pregnancies are still thought of in Cartesian terms. For instance, the conception of a pregnant organism as a single

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[7] In particular, see Irigaray 1991a, 1991b; Battersby 1998; Young 2005; Welsh 2013; Kingma 2015; Wynn 2002; and Maher 2007.

[8] Relative to the female form.

subjectivity with two related bodies (one maternal, and the other, fetal), is often implicit in discussions of pregnancy; alternatively, we have presumptions of two organismal entities always having been independent, as in the fetal container model criticized by Kingma (2015). The clean theoretical cut between body, or bodies, and subject, or subjects, betrays Cartesian thinking. Despite the work of Leo Strauss and Maurice Merleau-Ponty, for instance, which sought to undermine dualistic thinking about subjects and their objects, that is, in this case their bodies (Young 2005, 47), Cartesian paradigms implicitly dominate especially in medical or scientific settings, wherein the pregnant organism is sometimes referenced in terms of a unity, at other times in terms of a duality, and is frequently unacknowledged as a full subject. Cartesian ontologies flow from modes of deductive reasoning that simply cannot articulate the phenomenon of pregnancy because it represents a logical contradiction, as expressed by Tyler.

Anti-metaphysical[9] or social constructionist accounts are problematic because, although they have successfully challenged essentialism, they represent the methodology and are the terms under which pregnancy as a materially generative phenomenon is an impossibility. Anti-metaphysical accounts resort to presumptions of the duality of subjects and objects, as Cartesian accounts do, and again, this is the very thing that Tyler disputes. Social construction theory distinguishes between the construction of concepts and the construction of objects, and it does not deal with the emergence of material objects. Yet material objects do emerge (birth happens!). Therefore, although the meaning of pregnancy and even what constitutes pregnancy may be discussed in social constructionist terms, social construction theory cannot explain the genesis of embodied (material) subjects, which is part of what is at stake here.

Under Western modes of reasoning, it's impossible to point to a pregnant object as an object—it might be two! Or something "in between." Notice: still a *something*, with its attendant masculinist ontological assumption of discreteness. A pregnant object stands outside of the set of everything, logically speaking, precisely because we can't say "how many" it is. Thus, at least in an analytical sense, "it" has no (available) ontology because "it" is not referenceable in arguments, and yet it occurs; it is real.[10] The unique nature of pregnancy draws the singularity of the generative object into question. This is precisely what Tyler's subjective, phenomenological articulation of pregnancy draws out. By stating that "I am both one and the other. And I am equally neither one nor the other," Tyler expresses a

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[9] By anti-metaphysical, I mean anti-essentialist, anti-foundationalist, and deconstructionist accounts.

[10] This stands whether we take a realist or anti-realist position—whether it occurs "really" or linguistically doesn't impact this particular point.

subjective conundrum, yet it is one that I hope can be grasped rather universally. I speculate that one need not be pregnant and/or need not have the capacity to be so to imagine that if one *was* pregnant, an existential question might arise as to whether one was "one," in terms of subjectivity and/or/relative to embodiment. I'd like to highlight the "was" in the previous sentence for a moment: this renders the question an ontological one, despite its phenomenological roots. As implied above, this question finds its analog in questions that attempt to establish the ontology of pregnant organisms in scientific terms. Here, however, we must stretch any ontology that science can give us to allow for the possibility that subjectivity is a constitutive part of pregnancy, because subjects too, are sometimes pregnant.

In addition to my above speculation, there are multiple philosophical accounts of pregnancy that suggest that an impression of simultaneously being both one and the other, and equally neither one nor the other, is shared. Iris Marion Young suggests the pregnant subject is "decentered, split, or doubled," and describes her own pregnancy in the same terms Tyler does (Young 2005, 46–50). Christine Battersby notes that, "it might be possible (when pregnant) to be both self and not-self" (1998, 46). Julia Kristeva writes, "Within the body . . . there is an other. And no one is present, within that simultaneously dual and alien space, to signify what is going on. 'It happens, but I'm not there.' 'I cannot realize it, but it goes on.' Motherhood's impossible syllogism" (1980, 237). Thus, Tyler is not alone in her assertions; her statement appears to represent a shared experience. So I use her statement as a jumping off point in search of the answer.

The conditions that follow are also chosen in response to Tyler's description of her subjective experience of pregnancy. Ultimately, they are chosen with an eye to (collectively) resolving or avoiding the problems posed by traditional ontological accounts, as well as doing justice to pregnant organisms who are sometimes subjects.

The first condition is that an ontological model must recognize mammalian organisms as *not necessarily self-contained* (Condition 1). This condition flows from the nature of the gestational relationship between the pregnant organism and the fetus,[11] wherein they are connected by an umbilical cord and wherein the fetus is

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[11] Whether or not the fetus is an organism is up for debate. A fetus would seem to meet some but not all of the criteria of common definitions of "organism." Regardless of whether we find that a fetus is an organism or is not an organism, its genesis requires explanation, as does the fact that it has the potential to *develop into* an organism. If a processual ontology of organisms is found to meet this condition, which it is in a subsequent section, then this question becomes rather moot, as we are not at (so much) liberty to pick the temporal moment at which it becomes an organism, since it is defined in terms of a *process*.

supported by the placenta—a specialized organ that develops in the pregnant organism specifically for this purpose. The pregnant entity is defined by its physiologically interdependent maternal and fetal aspects.

The second condition for an ontological model of pregnancy is that it must allow for the *temporal transiency* of pregnancy (Condition 2), and thus for organismal identities not to be "picked out" by necessarily pointing at stable organismal states. The ontology that successfully accommodates pregnancy mustn't be required to reflect some stable state since mammalian pregnancy is transitory relative to the organism's life span.

Thirdly, the account must *not treat the pregnant organism as singular, nor as dual* (Condition 3). Singularity is ruled out because the organism begins as such prior to the pregnancy, but some fundamental change occurs that makes this organism different than before. This change is such that, in the set of organisms, it is unclear whether the pregnant organism would then count as one or two instantiations of its type. By the same token, a dual ontology is ruled out because of the bi-directional *sine qua non* relationship between the pregnant organism and the fetus. "Both" depend on the "other" to constitute the status of pregnancy. This requirement falls in line with phenomenological accounts of pregnancy, and does justice to pregnant subjects as both subjects and objects of their own pregnancies.

The fourth condition that an ontological model of pregnancy must meet is that it must *allow for an explanation of organismal genesis* (Condition 4). *Organismal* must be read to be inclusive of human organisms, and thus organismal genesis must be read as the genesis of potentially[12] self-aware subjects. An ontology must allow for the fact that organisms may be partially generative of others, including in some cases other subjects.[13] What I mean by *generative* in this context

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[12] The moment when self-awareness begins or the process by which it develops is open for debate.

[13] Kingma touches on this in a lecture (see Kingma 2016); she suggests that if her part-whole model of pregnancy is accepted, then it may be the case that *persons* give rise to *persons* in the case of human organisms, if one accepts animalism. In this work, I presume that either animalism is true, or that something very close to it is true. Ironically, some objections to animalism depend on pointing to the following inconsistency: that something may be identical to more than one thing. But this is one of the principles that is challenged here as a result of the reports of what pregnancy is like; furthermore, this "subjective" take on what pregnancy is like is affirmed by Dupré's view that the moment when one organism—or process— becomes two remains contestable. Remaining objections to animalism appear to presume accounts of persons who are neither ever pregnant, nor are ever born, and don't grapple with feminist perspectives on embodiment or with embodied

is that the pregnant organism must be defined as having *some kind* of causal relation to the organism that then may emerge from it. It's not just that the pregnant organism partly causes the emerging organism *to be what it is*; it's that the pregnant organism partly causes the emerging organism *to be*. The claim pertains to the very existence of the emerging organism—think of the Heideggerian idea of *being qua being*—rather than just to organismal nature. It would be naïve to think that one short condition could capture such an explanation fully. But the explanation must allow for our latest biological understanding of organisms, as well as for the philosophical understanding of embodied subjectivity.

On the biology side, such understanding involves the facts that haploid cells generated by the male and female bodies combine to form a zygote and are then implanted in the uterus of the potential mother.[14] That these cells have generative powers when combined is an opaque phenomenon that is not fully understood.[15] We may have sophisticated understandings of what happens on a cellular level that gives rise to new organisms, but we can't explain the reason it happens at all. To use Aristotelian terms, we can explain the phenomenon of emergence in terms of efficient causes, but not final causes; in other words, we can describe each falling domino in the causal chain, yet not know what causes the first one to fall.

The generative property should be treated primarily as a property of the haploid cells. However, the potential mother's body is a "necessary condition" for the phenomena of organismal genesis and pregnancy to occur.[16] It seems to be a part of what causes the so-called first domino to fall. Furthermore, the fetal environment influences genetic expression, impacting phenotype. For these

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cognition. A fuller refutation of animalism's counter-arguments is saved for another time.

[14] In extremely rare cases, fetuses have developed outside of the uterus, but still within the body of the potential mother. In addition, in some cases, for instance in the case of trans men, the gestating organism could be said to be a father. This, however, depends on how one slices up or connects sex versus gender, as well as social versus biological roles. It is not necessarily clear whether trans men would wish to describe their gestative roles as maternal or as paternal. Furthermore, it is not clear how such a role might be described in a medical setting, or theorized in a scientific one.

[15] Both males and females produce haploid cells and may therefore be said to be generative. However, I am focusing here on the generative aspect of and the phenomenon of pregnancy.

[16] Although IVF technology is now sometimes used, the zygote must still be implanted in a uterus. This might be subject to revision if medical technology begins to facilitate ectogenesis—gestation outside of a maternal body.

reasons, an account of the pregnant organism must accommodate that the pregnant organism is also partly generative, rather than simply holding that haploid cells alone are generative. Again, a detailed account is beyond the scope of this work, but what an account must capture is that the pregnant organism is not merely a container,[17] as it has been conceived throughout most of history, in which organismal genesis takes place, but is, at least partially, generative of other organisms.[18]

Importantly, in the case of human pregnant organisms, the ontological account must accommodate subjectivity. If animalism is true, then it's not just the case that organisms generate other organisms, but also that (embodied) subjects generate other (embodied) subjects. I'll iterate Kristeva's claim that science, as an objective discourse, is not concerned with the subject (1980, 237). Yet subjects are partly generated by pregnancy; presumably without pregnancy, there would be no subjects. Since one of my aims here is to suggest criteria for an ontology of pregnancy, and people—subjects—certainly are sometimes pregnant, the ontological model that accommodates pregnancy must accommodate their subjectivity.

Thus, accounting for generativity in this context must mean accounting for generative subjects who produce other (sometimes generative) subjects. Masculine, self-contained, singular embodiment that is in perfect, coextensive sync with its subjectivity throughout its biological life has determined our ontologies and modes of reasoning thus far. But under such ontologies and modes of reasoning, generativity is an impossibility. Highlighting pregnancy with its attendant phenomenology as a case study should now push us toward ontologies wherein that perfect, coextensive sync is not necessary, where generativity is possible, and where the "inconsistent" experience of splitting-yet-cohesion has ontological weight.

The fifth condition that an account of pregnancy must meet is that it must take materiality seriously. An ontological account under which pregnancy is possible *must be, at least in part, a material account* (Condition 5). Anti-metaphysical objections must be discarded in the context of this inquiry because a historical look at the evolution of human being, whether defined biologically, phenomenologically, or otherwise, is not contingent on its [social] linguistic articulation.[19] As even

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[17] See criticism of the "container model" in Kingma 2016.

[18] Even if we contest that a fetus is an organism, it seems that upon birth we must grant that the offspring is an organism. And if that is the case, and if that organism has a genesis, then the questions regarding its genesis remain.

[19] If we accept the theory of evolution, human beings were not always linguistic, and there is no particular moment when we became so, although it is possible to point to moments when we certainly weren't and moments when we certainly were.

deconstructionist Judith Butler notes, it is not that material existence itself is in dispute, but rather that its *meanings* are linguistically determined (Butler 2011). For the purpose of this work, the meanings don't matter so much as the fact that we are physically here to make any meanings at all. It is the phenomenon of pregnancy, whatever it means, that makes that true. Pregnancy would continue to occur even if it had no meaning or no particular meaning; in fact, it does occur in mammalian organisms for which this is the case.

To sum up, an ontological model must allow for organisms to be *non-self-contained* (Condition 1), *temporally transient* (Condition 2), *non-singular and non-dual* (Condition 3), *partially generative of others* (Condition 4), and *material* (Condition 5), in order to accommodate pregnancy. Other success conditions may need to be added at a later time. Irigaray (1991a) and Tyler both suggest that pregnancy is not graspable using traditional philosophical language and modes of argument. Even in this work, the demands of argumentation require me to undermine my point: to discuss the ontological relationship in question, I must refer separately to the whole and to parts, but by doing so I invoke the very ontologies I seek to challenge. My words cannot blur, yet bodies blur; our ontological model mustn't blur, but must somehow accommodate a blurred phenomenon. Ultimately, a deeply non-analytic account may be needed, or perhaps a new method of linguistic referenceability[20] that does not depend on traditional laws of logic or grammar.[21] For the moment, I write within these boundaries.

Key Elements of Bapteste and Dupré's Processual Ontology

Bapteste and Dupré's work seeks to challenge the standard organismal taxonomy, which helps determine organismal ontology, and which relies on a hierarchical "tree" model. On this model, entities at each observed level are constituted by entities at a lower level. For example, molecules constitute organelles, which constitute cells, which constitute organs, which constitute organisms (Bapteste and Dupré 2013, 381). This model is also used to map evolutionary relationships wherein vertical genealogical inheritance is ontologically defining. Bapteste and Dupré find that such a model is limited in usefulness because it presumes that genetic and species ontologies run parallel to one another and are

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[20] Our epistemology at least partially determines our metaphysics, or at least what we can know about metaphysics. See Sveinsdóttir 2015.

[21] Non-classical logical, artistic, mythological, or theological representations may be options.

exclusive of other ontological causal factors.[22] On this view, all *DNA Xs* are *Organism Xs*, and all *Organism Xs* are *DNA Xs*, to the exclusion of any other causal/ontological factors, and to the exclusion of factors that don't occur at the time scale at which the organism is being observed.

Bapteste and Dupré write primarily about the microbial world, which is rife with horizontal genetic transfers (HGTs), the practical and symbolic importance of which will be discussed shortly. They assert that their analysis is adaptable to the ontology of organisms in general, including multicellular ones (Bapteste and Dupré 2013, 381). In Dupré's subsequent presentation, "Pregnancy as a Bifurcating Process" (2015), on the topic of processual ontology and pregnancy specifically, he argues that there are a couple of different ways to understand organisms. The first way to understand an organism is as part of a cell lineage; this is the thing-based interpretation of organisms. The second way to understand an organism is as a living system; this is the processual interpretation of organisms (Dupré 2015). Thus, processual ontology may be examined as a model for its capacity to account for the phenomenon of pregnancy in mammals. In fact, one of the questions Dupré uses to kick off his discussion of pregnancy is whether the pregnant mammal is one process or two—which is part of what is at issue here.

Bapteste and Dupré take a decidedly ecological approach to ontology. Ecological is used here in its fullest sense and designates a network of interwoven and sometimes nested processes that cause something to be what it is. According to Bapteste and Dupré, organisms should be defined in terms of "how they emerge, are maintained and are stabilized" (2013, 381). They recognize that pointing to a specific temporal moment in the life of an organism based on which its ontology is to be defined is creating an abstraction—one that represents the organism in question in such a way as to obscure certain fundamental features. That, along with the challenge to the genetically "vertical" ontology forced by the tree model, is their main motivation for articulating an alternate ontology.

A full explication of the underpinnings and significance of the processual account is beyond the scope of this work, as is an analysis that does justice to all of its details. I will therefore draw on the two theoretical features of the processual account that significantly distinguish it from thing-based ontological accounts. The first feature is its acknowledgment that causal factors are contributed at different timescales. In Bapteste and Dupré's account, the appearance of ontological stability is generated by various steadying processes such as homeostasis on the level of individual organisms, and natural selection on the population level (2013, 381). In

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[22] For a detailed analysis of the limitations of the tree model, see Bapteste and Dupré 2013. The authors define causality as something that is "making a difference to something else" (380).

their view, what is perceived as stable (or not) depends largely on the temporal context in which it is perceived. So, for the appearance of stability, a molecular process may require only milliseconds, whereas an evolutionary process may require millennia.[23] Drawing attention to this difference allows for an ontology that is more temporally complex. The relevant point in regard to pregnancy is that (at least) one temporal snapshot in the life of mammalian organisms shows their gravidity—yet this snapshot is almost always erased by thing-based organismal ontologies. Yet without this very snapshot, organisms are taken to appear on the scene out of nowhere, and ontological emergence—the beginning of being—is a now-you-see-it-now-you-don't proposition.

The second fundamental feature with significance for a potential ontology of pregnancy is the processual account's acknowledgment of the significance of HGTs. In the microbial world, HGT occurs when DNA that the organism doesn't receive from its parent organism is assimilated by the organism and then operates within the organism. For instance, bacteria may receive, via HGT, DNA that codes for the production of flagella, and the bacteria then produce flagella. Thus, a fundamental genetic, ontological change to the organism may occur that is not accounted for by the tree model, since the tree model identifies its objects based solely on vertically ("parentally") transferred DNA. The ability of a processual ontology to incorporate HGT is significant because it problematizes oversimplified ontological identity models by allowing for the introduction of factors that were heretofore either invisible or seen as inadmissible as a result of the types of ontological models in use. Although there is no analog to HGT in the mammalian world, except perhaps in cases of micro- or macrochimaerism, the phenomenon of HGTs in unicellular organisms forces the expansion of ontological models to include non-vertical or epigenetic causal factors when accounting for an object's nature, emergence, or existence. Epigenetic influences, that is, non-genetic influences, can, for instance, affect mammalian genetic expression by activating or inactivating certain genes or subsets of genes at certain times.[24] Specifically, that non-vertical factors are now acknowledged to partly determine ontology is a function of the ecological nature of

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[23] The traditional view leads to the question of how to genomically define species—common objects of ontological study. Under the tree model, it may be impossible to define a species' ontology because it may be impossible to determine whether its genome was caused to exist "molecularly" in the last millisecond or evolutionarily in the last millennium. The processual view accommodates different timescales and therefore illuminates the fact that temporally disparate yet interwoven processes may be co-causal.

[24] For details, see, for instance, Ishino, Shinkai, and Whitelaw 2013.

processual ontology, in contrast to what I'd call the "anatomical" (i.e., static) nature of thing-based ontologies.

Discussion

What does this mean to the search for an ontology of pregnancy? Does a processual ontology make visible a phenomenon that other ontological models erase? Does it satisfy the requirements that were set forth?

The first condition (Condition 1) was that an ontological model must accommodate a non-self-contained identity to account for pregnancy, and it seems that the processual account is successful in this regard. It suggests the possibility of blurring between organisms, the possibility of an ontology à la Merleau-Ponty's *The Visible and the Invisible*.[25] On the unicellular scale of analysis, the genetically "porous" nature of certain organisms that processual ontology highlights and accounts for challenges the oversimplified self-coherence of traditional objects of study. HGT, as well as epigenetic discoveries such as the impact of certain proteins on gene expression, undermine the idea of a crystallized DNA code that fully determines an object.[26] Part of Bapteste and Dupré's project was aimed at destabilizing the causal "players" where organismal ontology was concerned (Bapteste and Dupré 2013, 386). The idea that identities are not outlined in black like objects in a coloring book, but are rather more diffuse or permeable[27] serves to accommodate pregnancy as it goes some way toward articulating an ontology under which there is the possibility of one individual organism being ontologically impacted—if not caused to be "what it is"—by aspects of another individual organism; if we wish to speak in terms of processes, then we may say that there is the possibility of one process being ontologically impacted by aspects of another process.

Dupré's presentation of pregnancy in the context of processual ontology shows that the question of how many processes occur during pregnancy is not settled (2015). But processual ontology facilitates the *theoretical possibility* of pregnancy in multicellular, mammalian organisms. Under a processual ontology, there is the theoretical potential for an object to split yet remain coherent as itself.

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[25] For how Merleau-Ponty's work applies, see LaChance Adams 2014.

[26] (1) This has obvious parallels with social ontological accounts in that the environment, biological and social, is acknowledged to impact identity. (2) While other scientific theories have challenges static biological identities before epigenetic theories had an impact, ontological models did not necessarily evolve alongside them in a way that reflected new insights.

[27] Again, this biological view seems to be analogous to the views of theories of social construction.

This application of processual ontology is demonstrated in "Pregnancy as a Bifurcating Process" (2015), wherein Dupré challenges the identification of the beginning of a process (i.e., an organism on the second interpretation) with its vertical cause.

The processual ontological account seems to meet the second condition (Condition 2), as it proposes that a more temporally holistic view of an organism serve as the basis of a sound ontology.[28] Bapteste and Dupré specifically challenge traditional organismal ontological accounts on the point that they use only small "time slices" of the life of an organism to determine its ontology (Bapteste and Dupré 2013, 381). That these time slices fail to reveal a great deal of important information may be the problem from the perspective of the life sciences; that sexist value judgments inform the selection of the time slices is the problem from a feminist perspective. These problems are not mutually exclusive, but are rather intertwined. Part of what is important about mammalian organisms is the story of their emergence, as Bapteste and Dupré assert. I offer that another thing that is important is that many of the organisms undergo the phenomenon of pregnancy and often parturition, without which there would be no emergence, and which, in the politico-linguistic context of human beings, has serious social consequences. It seems, then, that a processual ontological account would be inclusive of the phenomenon of pregnancy since it wouldn't pin ontological definitions to a particular (type of) snapshot of organismal life.

Whether the processual account meets the third condition is debatable (Condition 3). A processual ontology seemingly diffuses the boundaries of the object in question in a way that illuminates an interwoven ecology. This challenges the very notion of a numerical quality to identity—the question of how many things an object "is" seemingly becomes inapplicable. So, in a sense, a processual ontology affirms numerical disputability. On the other hand, this characteristic of the account seems to enable us to sidestep the very issue in question, which is, "how many" a pregnant organism "is." Thus it may undermine our ability to define *what* it is, at least under a linguistic regime wherein referents are necessarily discrete. Tellingly, Dupré asks whether a pregnant mammal is one process or two (Dupré 2015). He finds that fertilization of the ovum—the traditional "beginning" of an organism— "may result in 0, 1, or more subsequently distinguished processes" (Dupré 2015, 22). Thus, even if we think in processes rather than think in things, the numerical question remains; instead of asking how many *things* she is, someone who is pregnant may ask herself instead how many *processes* she is. Although Dupré acknowledges that there is no unequivocal answer, he notes that "there is little reason to say that a pregnant mammal is two distinct processes before birth" (Dupré

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[28] Life-cycle approaches to organismal biology may also meet this condition.

2015, 8). Therefore, in regard to the third condition, the processual theory of organisms falls somewhat short. It is here that an account driven by the needs and insights of microbiology may not be particularly appropriate for mammalian organisms to which pregnancy is endemic, perhaps least of all to the self-aware subjects of pregnancy. As shown in the introduction, the pregnant subject's experience of pregnancy includes (although is not exhausted by) a sense of duality.

In a unicellular context, instances of HGT may have profound and direct impacts—impacts that lead scientists to question the very identity of the resulting organism. But while in a unicellular context, HGT suggests a theoretical possibility of becoming something else, for a mammalian object that is pregnant, the theory must suggest a possibility of becoming some number else, while remaining coherent as itself, as its same number, in order to meet the third condition. Since the requirement is that the pregnant object be non-singular and non-dual, an account may be needed that is somehow trans-mathematical[29] or trans-logical. To the extent that linguistic structures are bound by logic, an account may be needed that is as yet unspeakable.[30]

The fourth condition the processual account must meet to do justice to the phenomenon of pregnancy is that it must allow that its objects are partially generative of other, ontologically identical objects (Condition 4).[31] This means that the ontological model must accommodate the fact that the pregnant organism in question may also be a subject, as is the case for humans.

Dupré acknowledges that at some point one process becomes two (Dupré 2015), and thus, his work can be interpreted as implying that genesis occurs. Pregnancy takes center stage in his presentation, so it is not erased as a phenomenon. But a crucial link between the pregnant mammal and the offspring seems not to be represented: that the offspring comes *from* the body of the mother,

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[29] Whether the phenomenon of pregnancy is representable using transcendental numbers remains an open question.

[30] This unspeakableness is demonstrated by our inability to (logically) reference something that is non-discrete; it has led Irigaray to suggest that language itself may need to be altered to accommodate "female subjectivity." This is taken to mean that it would facilitate an ontology of pregnancy. See Irigaray 1995. This sentiment is shared by Tyler (2000).

[31] (1) *Ontologically identical* refers here to objects having the same ontology, not to objects that are identical to themselves. (2) objects must also be allowed to be partly generative of ontologically *similar* objects, if we view sexes as ontologically different from one another. This is because potential mammalian mothers may become pregnant with male, female, or intersex offspring.

that the maternal organism *precedes* the fetal-cum-organismal one.[32] Dupré asks, "When does one process split into two?" But upon this articulation, an organism-as-process seems to arrive on the scene out of nowhere, just as an organism-as-thing once did. No matter what moment we point to as the beginning of the second process, we are still left with the question of where—what?—the process was in the moment just preceding that one. In fact, Dupré writes that in organisms conceived of as processes, reproduction "may not take place at a particular moment" (Dupré 2015, 19). Thus it is just as impossible to pinpoint genesis under process ontology as it is under static ontologies, particularly if accounting for subjectivity is required.

Processual ontology doesn't acknowledge that it is not merely a biological process that experiences a pregnancy—it is a subject.[33] While organism-as-process apparently replaces organism-as-thing, processual ontology ignores the subject in that it gives no account of the genesis or development of subjects. Requiring an ontological model to do so may be an extremely tall order.[34] Given that process ontology hails from the discipline of biology, rather than, say, neuroscience, cognitive science, sociology, psychology, or philosophy, it is rightly concerned with biological processes. But part of what is at stake here is the ability to give an ontology of human pregnancy, and it seems that while Dupré acknowledges human sociality as an apparent ontological factor for human organisms—insofar as he references society as the human organism's ecological niche with which the organism necessarily interacts as possibly being on par, ontologically, with biological factors—the story of the genesis of subjectivity, biological or otherwise, is left out. If we take the human organismal process to involve the social environment, then why don't we discuss the existential questioning that may arise in the pregnant subject in response to the phenomenon of pregnancy as a part of its ontology?

In "Towards a Processual Microbial Ontology" (2013), Bapteste and Dupré write that an account must capture the phenomenon of emergence, but they make no mention of procreation (however it occurs, i.e., for unicellular organisms or for others), beyond noting that an account must include information about how organisms are "maintained." However inclusively it is meant, "maintenance" does not seem to describe a category of behaviors specific enough to be inclusive of

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[32] Under the usual conditions; this may not be the case in instances of oocyte cryopreservation (i.e., egg freezing). Further complications to this claim may arise in cases of gestational surrogacy or other biomedical technologies.

[33] Although subjectivity may be conceived of as a process.

[34] But this should simply highlight a gap in metaphysics in general. Ontologies of subjectivity abound, but to my knowledge there is no ontology of embodied subjectivity that accounts for pregnancy. Recently, Kingma's work may be leading in that direction.

procreation or pregnancy. This omission represents a latent ascription to the masculinist ontologies I am challenging because of the asymmetrical treatment of the organism that assimilates horizontally transferred DNA versus the organism that provides it. It is precisely this omission I reference when I claim that sexist value judgments inform the selection of the time-slices that come to define organisms. The absence of gestating organisms from the conceptual inventory used to generate organismal ontologies is harmful because an important biological capacity is erased—perhaps the most important capacity given that without it, there would be no mammalian organisms to speak of.

In Bapteste and Dupré's discussion of unicellular life, when HGT occurs, it is discussed from the theoretical perspective of the organism receiving the transferred DNA. That organism is explained to have been changed—even (re)created as a different object. In a mammalian context, this omission finds its analog in ontological accounts that include the birth of an organism but not parturition—accounts that acknowledge that beings are born, but not that they give birth. Thus, in the microbial processual account, what is seen as noteworthy about organisms is their emergence but not their capacity to (partially) cause emergence in others.

Dupré's subsequent work addresses mammalian pregnancy specifically, but there is still only one implied reference to the fact that the parental organism gives rise (in whatever way) to the offspring. Overwhelmingly, organisms-as-processes are referred to as being intertwined, dynamic, having unclear boundaries, being influenced by their environment, "obligatorily symbiotic," underdetermined, ambiguous; "consortia" of microbes are used as an example of an organism better represented by a processual ontology. This terminology doesn't suggest that the mother is primary, which she is. It rather suggests a nonhierarchical relation between the generative and the generated organism. If at some point, one process simply becomes two, which process may be said to come from which? Which process generates the other? Again, in the context of unicellular organisms, this ontological relational horizontality may accurately reflect the nature of the relationships between certain organisms. But in a mammalian context, even if organisms are conceptualized as processes, they must be seen as vertically nested after all, if only in regard to their generativity. So the processual account does not quite meet the fourth condition. However, it seems that processual ontology could easily be expanded to be more inclusive of procreation from the theoretical perspective of the procreating organism.

Lastly, I examined whether the processual ontological account takes materiality seriously (Condition 5). And, in a word: yes. Bapteste and Dupré are biologists, and their discussion of processual ontology occurs in terms of physical causes and effects. "Discourse," with its attendant politics, is certainly inescapable. We are engaging in (political) discourse even when we discuss unicellular organisms

and their genetic and epigenetic interrelationships.[35] And in some contexts, discourse shapes material reality literally.[36] But even this requires that there be material to be shaped. That is not to say that material is somehow primary. Interestingly, Bapteste and Dupré's challenge to the tree model of organismal ontology may be read as a challenge to the concept of vertical causes and effects (i.e., to reductionism) in general. This suggests that material and nonmaterial causes may be networked together in a web within which neither one is privileged. However, materiality must be included because pregnancy is not contingent on its articulation, as the reproduction of nonlinguistic mammals shows. As Irigaray has pointed out, it is against the backdrop of the maternal (material!) body that discourse has the option of occurring (Irigaray 1991b) since maternal bodies are the partial "causes" of linguistic subjects. Subjectivity is endemic to bodies, discursively outlined or not, but the reverse is not necessarily the case. The processual ontological account certainly regards bodies, although it doesn't regard embodied subjects, at least not yet.

Conclusion

While the processual ontological account proposed by Bapteste and Dupré is a great improvement over static ontologies, more work must be done to articulate a robust ontology of pregnancy. To its credit, the account is ecological, and therefore allows for the possibility of regarding the pregnant organism as part of the environment necessary for emergence to occur. To the extent that it does so, it does not "erase" generative bodies from ontology, or from philosophy more broadly, as other ontological accounts have done. In fact, Dupré specifically discusses pregnancy in terms of processual ontology in "Pregnancy as a Bifurcating Process." However, it would be a stretch to say that the processual account does justice to the significance of pregnancy for mammalian ontology, particularly human—subjective—

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[35] For a discussion of the political commitments of sciences that seem far removed from "political" discourse, see Potter 1993.

[36] Social behaviors governed by gender norms may lead to *gendered* development that contradicts *sexual* norms. Rebecca Jordan-Young illustrates that, for instance, the imperative for young Orthodox Jewish men to intensively study the Talmud, while young women are tasked with household work, causes the women's musculature to have greater average mass than that of the young men. Thus a nonmaterial, i.e., social, factor, partly determines a biological feature. This is in direct contradiction to presumed sexual physical norms that dictate that men generally have larger muscles, and shows that social context impacts physical development in that it may *reverse* presumed sexual norms. See Jordan-Young 2010.

mammalian ontology. To be fair, the account wasn't originally theorized with this purpose in mind.

What we need from ontology to be inclusive of the gestating organism, including and perhaps especially self-aware gestating organisms (i.e., people), is the theoretical acknowledgment that subjects don't "arrive on the scene" out of thin air. Social construction theories seem to pick up where/when/once the embodied subject has arrived on the scene (i.e., once the subject has been born) but the details of the subject's physical being and emergence, which are necessarily intertwined with its subjectivity, and its own potential generativity, are left unattended to.[37]

If we do acknowledge the phenomenon of the emergence of embodied, self-aware subjects, as well as the phenomenon of gestation and parturition in them, then we have the capacity to ask the questions whose answers should help define the emergent subjects' ontologies. For instance, if we conceive of organisms (including organisms qua subjects) as self-contained, can there be such a phenomenon as pregnancy? If we conceive of organisms as temporally stable, can there be such a phenomenon as pregnancy? If we conceive of organisms as strictly singular or strictly dual, can there be such a phenomenon as pregnancy? If we conceive of organisms as always already "there," can there be such a phenomenon as pregnancy? If we conceive of organisms as disembodied, can there be such a phenomenon as pregnancy? The answer to these questions is *no*. Therefore, if we assume that the phenomenon of pregnancy is (metaphysically) real—that pregnancy is something that occurs, then an ontology must be articulated under which it is possible. The requirements I have set forth are intended to guide such an ontology.

Furthermore, an ontological explication is needed that is sensitive to the particularities of linguistic beings and that accounts for the phenomenological complications illustrated by Tyler. As discourse is generated by interrelated subjects and in turn (partly) generates our subjects, our ontologies must take the perspectives and experiences of pregnant subjects more seriously. This is especially pressing in light of a patriarchal discursive context—a context within which it is difficult to win the position of a full subject for the pregnantly embodied, as evidenced by the profound regulation, ideologically informed, of pregnant bodies. This is one of the more obvious ways that a given ontology of pregnancy has implications for the ethics and politics of pregnancy. "The pregnant" as a social group are often faced with discrimination, beyond the extent to which they belong to other marginalized groups (e.g., potentially women, trans men, and the disabled). Ontologies must be generated under the terms of which pregnancy and subjectivity is not a theoretical impossibility. We must create ontological models that can

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[37] Again, I don't presume that materiality is primary, simply that it's necessary.

capture or illustrate pregnancy, not just because they must be able to mirror the actual phenomenon of pregnancy as closely as possible for philosophy's or science's sake, but also because of the ethical and political consequences that they help to usher in.

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