Were You a Part of Your Mother? The Metaphysics of Pregnancy

Abstract

Is the mammalian embryo/fetus part of the organism that gestates it? This is not a question that has received much attention. The *fetal container model* maintains that the fetus is not part of, but merely contained within or surrounded by the gestating organism. The *part-whole claim* states that the fetus is part of the gestating organism. This paper argues, first, that the fetal container model appears to be the received view; that it is widely assumed, but without good argument; and that it needs substantial support if it is to be taken seriously. Second, that the part-whole claim, which is not presently defended, derives considerable support from a range of biological and physiological considerations. The paper tentatively concludes in favour of the part-whole claim, and outlines the interesting further questions this raises.

Introduction

Were you a part of your mother? This title-question will not be answered in this paper because a discussion of personal identity is beyond its scope. But we will take a first step towards answering it by considering a narrower question: is the mammalian fetus part of its gestating organism?

This latter question is not one that has received much philosophical attention. Two options spring to mind. The fetus is either part of the pregnant organism, or

it is not, in which case the pregnant organism merely contains or surrounds the fetus.[1] The latter view – call it the *fetal container model* – is widely assumed in the philosophical literature. Smith & Brogaard (2003: 74) contend that fetuses are inside but not part of the pregnant woman, the way "a tub of yogurt is inside your refrigerator"; Oderberg (2008: 266) writes that the embryo is "an organizational unity that *is not a part of its host*" (*my emphasis*); and Howsepian (2008:152) asserts that the fetus could not be "merely a part of some other thing".

But the fetal container model is not universally shared. In an influential paper on pregnancy, Iris Marion Young describes the fetus as "part of me" (1984: 50). And Mellor writes in a paper on micro composition: "severing a new-born child's umbilical cord makes the child cease to be a *part of its mother*" (2008: 67).

Who is right? In section one, I examine the fetal container model and argue that, the two previous examples notwithstanding, it is assumed virtually throughout the philosophical literature – but generally without argument. The few arguments that are meant to support it either beg the question, or, properly interpreted, support the opposing view. In section two, I examine the case in favour of the part-whole claim, focusing on biological accounts of the organism. Most of these support the idea that the fetus is part of its gestator, but more research is needed. In section three, I respond to four objections, before concluding, in section 4, that, for the time being, the part-whole claim appears the more plausible view. I outline some of the interesting further questions that

[1] One might think there are further options; the pregnant organism and fetus compose a third, larger entity that isn't an organism. Such a view is either a version of the fetal container model, or – if it can't survive the challenge that the larger entity is in fact the pregnant organism – the part-whole claim.

the part-whole claim raises. .

Clarifiying the Question

Before we start, let's get clear on the question.

First, claims in this paper are restricted to organisms: placental organisms to be precise[2]. Nothing can be inferred from claims about organism to claims about persons without significant further assumptions that are beyond the scope of this paper. Note in particular that claiming that the fetus is a part of its gestator does not, in the absence of significant further premises, entail that it could not also be a person and/or organism in its own right. The same holds for moral claims: these are not entailed by claims about fetal parthood alone; it is, for example, entirely compatible with the claim that the fetus is a part to think that it is a morally and even metaphysically very special part.

What goes for fetuses goes for their gestators. The persons who are pregnant are all too frequently overlooked in philosophical discussions of pregnancy. But, insofar as persons aren't identical to organisms, pregnant persons genuinely fall outside the restricted scope of this paper.[3] The same holds for non-fetal male organisms/persons. This is not to diminish the genetic and – surely even more important – social contribution of fathers to raising offspring. But these do not affect whether the fetus is part of the pregnant organism.[4]

Second, let me clarify what I mean by the part-whole claim. In first instance I take this to be a claim that employs our common-sense understanding of part-

[2] Placentals are the subset of mammals that have a placental pregnancy. This excludes marsupials (e.g. kangaroos) and monotremes (e.g. platypus).
[3] I further discuss the assumption that questions about fetal parthood can be addressed *without* considering the opinion of pregnant persons in section 3 (objection 3).
[4] I discuss the view that the genetic contribution of fathers matters in section 3 (objection 1) and briefly revisit further questions about paternal organisms and their sperm in section 4.

whole relations: roughly the sense in which kidneys are parts of dogs; table-legs parts of tables; and engines parts of cars. How such common-sense claims are to be understood metaphysically depends on further substantive views, many of which cannot be considered here. In the context of an ontology that contains organisms, kidneys, part-whole relations, and where kidneys are parts of organisms, the meaning of the part-whole claim is straightforward. This is the sort of ontology I shall assume in this paper. But it is not one that I shall defend, nor is the part-whole claim conditional on the truth of such an ontology; it is just subject to a different interpretation on other views. My general suggestion for other metaphysical views would be to interpret the part-whole claim by treating fetuses as such a view would treat kidneys. For example, in an ontology that contains only organisms and simples – and where kidneys are eliminated in favour of 'simples, kidney-wise arranged' – the part-whole claim should be interpreted as the view that fetuses are simples, fetus-wise arranged, that stand in the same sort of relation to the gestating organism as simples arranged kidney-wise do. It is evident that in the context of such an ontology, and many others, the part-whole claim may require further and more specific arguments than I am able to provide in this paper. My defence of the part-whole claim in this paper is therefore restricted to ontologies that recognises organisms as having parts such as kidneys.

In line with out common-sense understanding of part-whole relations I also assume throughout the paper that parthood relations between fetus and pregnant organism are asymmetrical: the fetus is part of the gestator, but the gestator is not part of the fetus. This seems plausible on the face of it, but I offer no further defence of the assumption.

Third, a note on terminology: henceforth I will speak about '*foster*' and '*gravida*'. The 'gravida', a Latin term denoting the pregnant woman in medical case notes, is the pregnant organism The 'foster'[5] denotes anything the gravida is pregnant with: so anything from early embryo or perhaps even zygote up until the fetus-about-to-be-born. This does not imply that there aren't important distinctions between, say, zygotes, early embryos and term-fetuses; merely that in terms of their mereological relationship to the gravida, and thus for the purposes of this paper, they can be unified. I am deliberately noncommittal about the precise spatial and temporal boundaries of fosters, and on whether zygotes are fosters, for reasons I shall briefly return to in the conclusion.[6] But I do think that we can speak about fosters uncontroversially at least from implantation onwards.

1. The Fetal Container Model

According to the fetal container model, fosters are 'merely inside' the gravida, the way 'a bun is in the oven' or "a tub of yogurt is in the fridge" (Smith & Brogaard, 2003: 74). Birth is a mere change of environment: like or opening the fridge or oven and taking out your desired breakfast.

The fetal container model does not come from nowhere: it is heavily promoted by the dominant representation of pregnancy that pervades contemporary, western, Euro-Anglo culture. This emphasises the physical resemblance and continuity between fosters and babies, presenting them as already-separate individuals, whilst at the same time deemphasising the fosters

[5] 'Foster' is the Danish word for fetus. I borrow the term from Smith & Brogaard (2001).
[6] See (anonymised – under review) for a consideration of spatial boundaries.

location within and connection to the gravida. Images of pregnancy, for example, invariably give fosters' skin the colour of (white) babies rather than the dark-purple that they actually are; and they tend to fade out, or omit altogether the gravida, placenta and umbilical cord. Our language also reinforces this idea: it is common to refer to fosters as 'babies' almost regardless of the developmental stage; early ultrasounds are often presented as "baby's first picture" (Mitchell, 2001) and a popular pregnancy-tracking website writes of the second week: "[b]y this time your developing baby is a little ball of cells".[7]

The popularity of this representation does not mean it either unproblematic or uncontroversial. A rich tradition in history and sociology both documents its cultural dominance, and deconstructs it; it argues, broadly speaking, that what I shall call the 'fetal container depiction' of pregnancy is a recent and culture-specific phenomenon, which is contingent on particular historically situated social developments and often on gendered and classed power-structures.[8] These include, for example, medical professionals' attempts to gain and extend authority over the maternity domain (Arney, 1982) and the political interests of the anti-abortion campaign whose fetal imagery that strongly affirms the view of a separate human 'merely residing inside' the gravida (Dubow, 2011; Petechesky, 1987).

The sociological and historical deconstruction of the fetal container depiction of pregnancy need not invalidate the fetal container model. Nor does it provide us with alternatives. But it should make us wary of uncritically assuming a

[7] 'Your Pregnancy: 2 weeks' (last updated: March 2015). See also e.g. 'You and your baby at 0-8 weeks pregnant' (page last reviewed: 09/02/2015).
[8] e.g. Bergum, 1997; Casper 1998; Duden 1993, 1999; Katz-Rothman, 1994; McClive, 2002; Oakley 1984)

metaphysical claim that resembles and may be heavily influenced by a mere contingent cultural representation. Uncritically assuming the fetal container model is, however, exactly what much of contemporary philosophy has done.

This widespread assumption is evidenced not just in explicit endorsements of the fetal container model in discussions of the metaphysical status of the foster, as quoted in the introduction. Much more tellingly, we can infer just how widespread and implicit the acceptance of this view is from the *absence* of discussion of maternal-fetal relations elsewhere. Consider, for example, animalists who commit to the views (1) that we are organisms and (2) that we were fetuses. Since fetuses occur in other human organisms, this raises some interesting questions, as I discuss further in section four: can humans be part of one-another? What does that mean for our relations to our mother? No animalist, however, considers these questions: in two book-length defences of animalism, neither Olson (1997) nor Snowdon (2014) even mentions them. This suggests that a fetal container model is implicitly assumed – or at least that the possibility that the foster might be anything other than merely contained within the pregnant woman, was not forefront in their minds.

As another example, most of the literature on abortion appears premised on the view that the foster is *not* part of but merely inhabiting or using the maternal organism. Thompson (1971), for example, famously constructs the analogy of waking up with a critically ill violinist plugged into your kidneys, who needs to remain on life-support for nine months if he is to survive. This analogy explicitly construes pregnancy as the inhabiting or *use* of one's body by a separate

individual, not as having a part of one's body that is (also) another.[9] The related field of obstetric ethics also frequently characterises the foster as a patient who is separate from the mother (Chervenak et al, 1996), 'imprisoned' in the "fortress" that is the maternal abdominal wall (Phelan, 1991).[10]

Finally, the fetal container model appears widely assumed in metaphysical accounts of the organism. By way of example, consider the following amusing quote, that illustrates just how uncontroversial the fetal container model is assumed to be:

> "Most people would deny that there is something entirely composed of Alpha Centauri and my left thumb. We are more tolerant of composites whose parts are more "connected", a prime example being molecules. And then there are the various "intermediate" candidates, perhaps *the mereological sum of a pregnant woman and the fetus*, or schools of fish—cases in which we are not sure whether "there are" such putative things." (Bave, 2011: 1030, *my emphasis*).

A widespread and uncontroversial philosophical assumption, which is what the fetal container model appears to be, better have a solid grounding. What justification for the fetal container model is provided? It is perhaps the best evidence of the widespread and implicit acceptance of this model that it is so rarely justified. What arguments are presented, I shall argue, fail to convince.

[9] See also Purdy (1990).

[10] I should add that the fetal container depiction has not passed without criticism in these contexts. Lyerly et al (2008; 2009), for example, question the adequacy of that representation for moral and medical contexts, and describe pregnancy as a state of physical and emotional entwinement – a state that Little (1999; 2005) characterizes as one of *intimacy* and *interdependence*. See also Lindeman Nelson, 1994.

The Intuitive Argument

First, consider Howsepian (2008), who provides an argument that reflects elements of, I think, people's first blush intuitions[11]. Call it 'the intuitive argument':

P1. Fosters are a HUMAN (where HUMAN is a variable that denotes something like human being, person, or similar).

P2. No HUMAN could be part of another HUMAN.

P3. (implicit): Gravidae are a HUMAN.

C: Fosters can't be part of gravidae.

What support is there for the premises of this argument? The third premise, I think, we can accept. The first premise is, to put it mildly – under dispute. But the second premise, especially, appears to be assumed without any explicit foundation.

One way we might support the second premise is by appeal to a more general principle that objects of a restricted[12] kind *F* can't have *F*'s as their part: a principle of 'maximality' (Sider, 2001). Such a view is frequently held for mammalian organisms. This motivates Hawley (2001: 166) to write that: "no cat is a proper part of a cat" – a claim that entails either that fetal cats aren't cats, or that the fetal container model must be true.

This cannot support the second premise, however. The maximality principle is

[11] Oderberg (2008) appears to advance a similar claim, and we can find many more on anti-abortion websites.
[12] Restricted because for the kind 'material object' few would defend the claim.

motivated by a very specific 'problem of the many'[13]: any particular cat *T* appears to have many proper parts that also seem to lay claim to being a cat, because they would come to coincide with *T* if only *T* were to shed a few particular hairs. Are there many cats thus sitting on the mat? Intuitively, there is just one: *T*. The case of the pregnant cat and its fetus(es) is not like this. If *T* were 'reduced' such that only its fetal part(s) *F(, G & H)* remain then we are not tempted to think that (either) *F(, G* or *H)* would coincide with *T.* They would either be or coincide with the late *T*'s orphans, or her dead fetuses, or – in the best scenario – be suckling *T.* We already know that maximality claims are problematic for such cases: it appears possible for the Pope's Crown to have a Crown as a part – and here, too, we are not tempted to think that that Crown would coincide with the Pope's Crown if the Pope's Crown were reduced to this part.[14] It is thus possible for an entity of type *F* to have an *F* as a part, and therefore it is at least logically possible for a HUMAN to have a HUMAN as a part.

This discussion illustrates an important broader point: we should be very careful not to prejudge the metaphysics of pregnancy. Maximality conditions were devised either with or without the possibility of pregnancy in mind. If the former, then they merely presuppose the fetal container model (or the view that fetal cats aren't cats); they cannot justify it. But of course this is not how they were devised; it is the latter. Hawley did not pause to consider fetuses when she wrote that passage – her concerns lay with the vague spatial and temporal boundaries of objects.[15] We should therefore start an investigation of the metaphysics of pregnancy with pregnancy itself; not with a set of prior

[13] Unger (1980).
[14] Wiggins (1980).
[15] Personal communication.

philosophical commitments that were most certainly formed *without* bearing the possibility of pregnancy in mind. If those other commitments need revision because pregnancy raises metaphysical difficulties, then so be it. It wouldn't be the first time that humans do so. Indeed, this is precisely why mammalian pregnancy is an interesting topic for metaphysics.

In the absence of a general principle in support of premise two, one might think there is something specific about the kind 'organism' or even 'human' that supports it? Indeed one might think this *obvious*. After all, you and I are human, and neither of us is presently part of another human. But this is an unwarranted generalization; this does not tell us that no human could be part of another humans; only that at least some humans are not part of another human. Alternatively one might think that humans being part of other humans is just *so difficult to imagine,* and so far removed from the way we, exemplary human adults are, that it can't be true. But that merely suggests that you haven't thought about fosters very hard; fosters *are* very different from the exemplary human adult, and if premise one is supposed to hold, then HUMAN must be a rather broad category, that includes entities that have, at least on the face of it, quite different characteristics from us, adults.

One might also accept premise two on the grounds that it is some brute characteristic of, or follows directly from, the kind of thing that a HUMAN is – a self-standing individual, for example – that no HUMAN could be part of another HUMAN. But here we have to be careful.[16] Remember premise one, which stated that fosters are HUMAN. Whether that premise is true depends on what precisely

[16] This argument and its presentation draw upon Walters (2012) on abstract objects.

is packed into the attribute HUMAN; if HUMAN is 'conscious, self-aware entity', for example, then premise one is false. If, by contrast, HUMAN is 'living entity possessing a full set of human genes' or 'entity developing from the unification of a human sperm & egg' then premise one is true. Thus if we pack into the notion HUMAN the brute fact that HUMANS can't be part of other HUMANS, then it becomes an open question whether premise one is true: whether fosters are HUMAN. Moreover, the answer to this question depends entirely on what the whole argument was meant to establish: whether fosters are part of the gravida.

Alternatively, if we assert that it is a brute fact that fosters are HUMANS, which makes premise one true, then it is an open question what attributes can be packed into HUMAN – for these can only be those attributes that fosters do in fact possess. It thus becomes an open question whether HUMANS can be part of other HUMANS – i.e. whether premise two holds – which again depends on whether fosters are in fact part of the gravida.

In the absence of further substantive support for its premises, 'the intuitive argument' cannot establish whether fosters are part of the gravida, rather it merely presupposes it. If the argument is to do some work then it must do so on the back of a substantive conception of HUMAN on which both premises are meaningfully supported. It is not immediately obvious what such a conception would be, however.

Perhaps the most likely candidate for such a conception is one that is supported by a more general metaphysical view on which substances can't have

parts that would persist through their separation.[17] On such a view premise two becomes irrelevant, and the argument becomes:

P1. Parts of substances can't persist through separation

P2. Fosters persist through birth.

P3. Gravidae are substances

C. Fosters can't be part of Gravidae.

Even if one accepts premise one, such an argument still begs the question. Premise two is no doubt motivated by the view either that fosters are humans, or that they are numerically identical with later babies. But not only are such views precisely what is under dispute, they are especially easy to deny on this metaphysical view. For the view also denies that the kidney that is now part of my brother, but that he is about to donate to my sister – which will involve its sitting on its own in a box of ice for a while – will persist through the affair and end up in my sister. What is compelling on the face of it, however, is that my sister does end up with the very same kidney that used to be part of my brother and that also spent some time in an icebox. There is thus no reason, on this view, to give any weight to the prima facie compellingness of identity preservation between foster and baby.

That is not to argue in favour of either position; it is merely to point out that the adoption of a view that denies identity preservation between parts and substances does not itself clinch the argument against fetal parthood; it leaves

[17] Oderberg (2008) appears to harbor such a view, as – perhaps, for he does not defend it – does Howsepian (2008).

that question wide open. Further consideration of such views or the arguments relevant to them is beyond the scope of this paper.[18]

The Topological Argument

What non-question-begging arguments are presented in favour of the fetal container model? Not many. Smith & Brogaard (2003) come closest to providing one: they argue that the foster, although within the physical boundaries of the gravida, is not part of that organism because it is not topologically *connected* with her. Their main argument is that the foster has a "complete external boundary" that it does not share with the gravida. But, as I argue in more detail elsewhere[19], this is simply false. By Smith & Brogaard's own criteria, such a boundary cannot lie at the level of the umbilicus, for the umbilical cord is topologically connected to the foster. But it can't lie at the level of the placenta either; the placenta is perfused by both maternal and fetal blood supply and connected to the foster by the umbilical cord, and to the rest of the gravida by growing directly into (or out of) the uterine wall. Indeed, Smith & Brogaard's criteria do not support the fetal container model, but speak against it: in favour of fetal parthood. And the apparent mistake Smith & Brogaard make when discussing the physiology of pregnancy is neatly explained by the literature on the fetal container depiction of pregnancy; deemphasizing the connection between gravida and foster is precisely what that depiction does and a core element in its construction. An example is the 'lonesome space traveller'

[18] Other metaphysical views that might be used to support the argument may deny the possibility of there being parts, or complex object that are parts, altogether. See my earlier comments on these on p4. Note that on such different views the arguments relevant to, and the implications of, the part-whole claim differ. A view on which fosters are parts and parts can't persist through separation, for example, entails that organisms were never fosters.
[19] anonymised; under review.

depiction of the foster[20]; note that Smith & Brogaard use that very metaphor, the "astronaut leaving her spaceship", as an analogy for birth (2003: 65).

Conclusion

I have argued that the fetal container model appears widely assumed in philosophy, but without convincing argumentation. This widespread acceptance is neatly explained but anything but justified by the socio-cultural dominance of the fetal container depiction of pregnany. The few arguments that are presented in favour of the fetal container model appear either to beg the question, or to speak against it. The fetal container model does not stand on solid ground.

That does not mean, of course, that the model is wrong; a defense may yet be mounted in its favour. But pending such efforts I conclude that philosophers are ill-justified in simply assuming the fetal container model, as now appears common practice; instead assuming the model carries at least some burden of proof.

What about the alternative?

2. The part-whole claim

According to the part-whole claim, the foster is part of the gravida. Whether this claim is correct depends on the more general question of what is part of the (mammalian) organism. This is a question into which an account of the organism provides insight. There are at least two general directions in which one might seek such an account. First, one might look towards contemporary biology and

[20] Buklijas & Hopwood (2008).

philosophy of biology, both based in evolutionary theory, where much has been written on that question. Second, one could consult accounts of the organism in metaphysics. In this paper I will do the former. The latter is for future work.

What is the philosophically respectable biological account of the organism? There is no single answer. Accounts of the organism, and more generally the question what a biological *individual* is, are live areas of biological and philosophical research. (e.g. Clarke 2010, Pepper & Heron 2008, Wilson & Barker 2013). Although the notion of an individual organism may seem fairly well-circumscribed when we consider horses and other mammals, the natural world presents a dazzling variety of organisation that defies such easy categorisation: colonies of ants may be best described either as groups of individual organisms, or as 'superorganism' (Wheeler, 2011); the Portugues 'man-o-war' appears to us a single organism – a jellyfish – but could equally be viewed as a highly stable and organised community of organisms; and many organisms, including mammals, outsource some of their key-functions to symbiotic bacteria: we, too, may be complex symbiotic communities rather than the genetically unified individuals that we think we are (e.g. Hutter et al 2015).

I do not want to select one, necessarily tendentious, account of the organism in the context of this on-going area of research. A better strategy is to consider a range of plausible criteria that frequently recur in the delineation of organisms (Pepper & Herron, 2008). These criteria provide guidance to what is and isn't part of the organism. In adopting these criteria I do not commit to the view that meeting any one of them is either necessary or sufficient for being a part of the organism, nor do I defend them. I only suggest that we have to start this

investigation somewhere and that something that meets all these criteria has a very strong initial case for being part of an organism. I will demonstrate that this is the case for the foster and gravida.

1. Homeostasis & Physiological Autonomy

The first 'theme' that Pepper & Heron identify is homeostasis and physiological autonomy. Organisms, especially mammals, have an *internal* environment, which they actively maintain in a state of relative homeostasis, and within narrow parameters, as opposed to an *external* environment, where much larger variation in conditions can be tolerated.[21] In mammals, for example, internal temperature, acidity, osmotic pressure, etc. are all very tightly regulated, and much of the metabolic activity of the organism is devoted to this regulation. This is in stark contrast to the considerable temperature- and other fluctuations in our outside environments that are tolerated, but that would not be compatible with continued living of the organism if they happened internally. Plausibly the internal environment is part of the organism; the external environment is not.

What falls inside, or is part of the inside environment, of the organism? At the very least, the content of our bodies – e.g. muscles, organs, blood, etc.; though possibly not the contents of our gastro-intestinal system. Somewhat more formally: everything that is inside the (topologically) doughnut shaped unit that is lined by the epidermis – the skin – and the linings of the gastro-intestinal tract.[22]

[21] See e.g. Ruiz-Mirazo et al (2000: 217).
[22] That is not to commit to the view that everything outside the doughnut is not part of the organism; lots of considerations speak in favour of, say, including the symbiotic bacteria on our skin or in our gut, or our stomach, where we tightly regulate a specific climate, as part of the

The foster is within the internal environment that is the gravida, for two reasons. First, on spatial grounds. Whilst a debate can be had about the proper delineations of 'inlets into' or apparent 'connections' between inside and outside of the doughnut – think of the spaces in nose, trachea and lungs; bladder, testes, sperm vesicles and urethra; and pores and exchange functions in skin, nose and gut – this debate is hardly relevant to fosters. Even if one thinks the uterine cavity is not part of the internal environment[23], then the foster still would be: the foster (post-implantation) resides not in the uterine cavity, but is implanted in the uterine wall, within the maternal deciduous tissue and is, at least in its early stages, completely covered by it. Second, the foster appears part of the internal environment on homeostatic grounds; it is regulated by, and within the context of, the rest of the gravida, so that the entire entity can maintain the narrow parameters of internal environment that are compatible with life.

One may object that the foster appears to maintain its own internal environment relative to the rest of the gravida, and has a certain degree of physiological autonomy. But that view is problematic. First, the 'external boundary' of the foster is not clearly delineable (see earlier discussion of Smith & Brogaard (2002). Second, the foster relies on the rest of the gravida for many of its important physiological functions, including the extraction of oxygen, digestion and waste disposal; lungs and kidneys only start working after birth. Third, this is a universal feature of multicellular organisation and one of the reasons why 'the problem of biological individuality' is the problem that it is. My

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organism. Exceptions apply to and debates can be had about every criterion that I list, so I won't be repeating such points.

[23] Which is not a position I recommend: that 'space' connects via oviducts to the peritoneal cavity – which, presumably, *is* part of the organism.

cells and organs all have clear delineations of their internal and external environments, and internal metabolisms and homeostatic requirement that may differ from what happens outside. Up to a point, the same applies to organs (think of the blood-brain barrier, for example); nonetheless cells and organs are (also) part of the larger organism.

2. Metabolic and Functional integration.

A second main 'theme' in defining the organism, which is closely related to homeostasis and physiological autonomy, is metabolic unity and functional integration.[24] An organism's parts normally work together as one metabolic system and towards a common 'goal': survival and reproduction of the organism (Boorse, 1976, 2002). Or, more precisely, organisms are the product of a long history of competition and selective reproduction – evolution by natural selection – which means that under conditions relatively similar to those in which their ancestors evolved, their parts tend to act in ways that promote the organism's inclusive fitness[25]. This means that functional behaviour of parts is interdependent, and must be understood and explained with reference to the overall organism. For example, the lower-level 'self-sacrificial' behaviour of parts of the organism, such as e.g. apoptosis (planned cell-death), makes no sense if we considered the cell to be solely an independent and individual entity, in pursuit

[24] Pepper & Heron, 2008; see e.g. Ruiz-Mirazo et al, 2000; Sober, 1991; Wilson & Sober 1989; Wilson, 1999; Ruse 1989).

[25] For this understanding of function, see e.g. Millikan, 1984, 1989; Neander, 1991. An organism's inclusive fitness does not just take into account its *direct* reproductive success – aka the production of offspring – but also it's *indirect* reproductive success: the transfer of its heritable traits to the next generation by relatives: the reproduction of kin..

of its individual survival and/or reproduction. But it does make sense if we consider that the cell is a functionally integrated part of the overall organism.[26]

This functional integration is evidenced by the metabolic unity of the organism. Metabolic unity is much more difficult to apply in determining what is part of the organism than functional integration, as one way the organism maintains homeostasis and regulates its metabolism, for example, is by seeking and drinking water. Moreover, organisms engage in regulation of their environment through, for example, niche construction and agriculture (Odling-Smee, Laland & Feldman, 2003), both of which, as cultural traits, are themselves heritable and thus subject to evolution by natural selection. Nevertheless within the organism metabolic regulation is fairly direct, involving many hierarchical and mutually responsive feedback systems.

Fosters are functionally and metabolically integrated and interdependent parts of the gravida. First, because they depend upon the rest of that organism for several of their metabolic activities, including waste disposal and temperature regulation. Second, because the gravida actively *integrates* the foster into its metabolic system, making anatomical and metabolic adjustments to facilitate the foster, such as an increase in cardiac output, that persist for up to months after pregnancy. In contrast to, for example, the pathological changes involved in hosting a malaria parasite or tuberculosis bacillus, these changes are functional: they were likely selected for and they certainly tend to contribute to

[26] This is a simplification. Competition and differential selection of heritable traits – aka evolution – can be found at all levels in the biological world, from within the genome itself, to supra-organismic structures, such as groups. Questions about functional integration, organisms and individuals are therefore closely related to the debate over evolutionary levels of selection (e.g. Okasha, 2007) and degrees of (active) suppression of within-group or within-individual competition.

the organism's inclusive fitness. Third, metabolic and functional integration is evidenced by the way in which foster and other parts of the gravida work together; successful maintenance and conclusion of the pregnancy is a complex interplay between foster and other regulatory parts of the gravida that remains poorly understood.

One may object that the foster cannot be functionally integrated because it does not contribute to, but in fact diminishes the (chances of) survival of the gravida. But that is irrelevant. Evolution by natural selection doesn't produce organisms that tend towards survival, but organisms that tend to promote their inclusive fitness. That requires primarily reproduction; survival only matters in aid of that.[27] A trade-off between survival and reproduction is entirely normal; we find it all over the natural world. Think of the energies invested and risks taken by male stags in growing giant antlers and then using them to fight each other in the mating season: essential for reproduction, but hardly promoting survival.

Denying that reproduction is a core function of the organism, or denying that organs that promote reproduction but not survival are functionally integrated, is not just biologically insane; it would also significantly diminish organisms, excluding e.g. penises, testicles, ovaries, breasts and wombs from being proper parts.

Another possible objection to the claim that fosters are functional integrated points towards serious fetal-maternal conflicts. And indeed these happen and may threaten the gravida's life. They are not the norm, however. Other

[27] I want to emphasise that I am speaking purely in biological/evolutionary terms here; I am not making any normative claims about what people should in fact do with their life.

pathologies, such as autoimmune reactions, tumours and overactive thyroids can also threaten the organism's life. Whether pathological or malfunctioning immune systems, tissues or fosters cease to be functionally integrated or cease to be part of the organism is a question I set aside – though the view that they aren't strikes me as implausible. Either way the mere possibility of their malfunction cannot threaten the functional integration of normal immune systems, tissues and fosters. And it is worth remembering that maternal-fetal conflict is not in the foster's or future baby's interest either; baby mammals that kill their mother during pregnancy or birth stand virtually no chance of survival.

Finally one could object that foster and gravida are not functionally integrated because they sometimes 'compete' for resources, such as calcium and iron. But this is not a relevant indicator: muscles and gut compete for oxygen; brain and muscles compete for sugar; bladder and sperm compete for the penile urethra; and sex chromosomes compete to unbalance the first meiotic division. What is biologically striking about such competition is not that it exists, but the degree to which it is limited and supressed by the unity of the organism; biological individuals and their parts in which such competition is successfully balanced and supressed are fitter than those in whom such lower-level competition is rampant. Given the genetic heterogeneity involved in the case of foster and the rest of the gravida, the very high degree of successful regulation and suppression of the 'competition' between them is what surely stands out as particular impressive; itself a key indicator of organismic individuality.

That is not to say, of course, that the 'evolutionary interests' of the foster and the rest of the gravida completely coincide; because their genomes only partially

overlap, their genetic inclusive fitness may come apart. Thus, statistically speaking, the gravida may better serve the promotion of its inclusive fitness by investing comparatively less in the present foster, instead spreading its resources and investment over a lifetime of iteroparity – which may involve investing in present offspring or saving resources for future fosters. The foster, by contrast, may wish to hog comparatively more of the gravida's resources for itself.[28] This is a point I shall return to later.[29] For now, the criterion we are concerned with in this section is functional integration; not – for want of a better term – *complete coincidence of evolutionary interest*. And if we stick to our existing criteria, which state that organisms are marked by a high degree of functional integration and metabolic unity, then fosters are part of the gravida.

3. Topological continuity.

A third frequent theme in delineating the organism is that organisms are 'physically continuous and bounded' (Wilson & Barker 2013). See also Wilson 2005); they display 'spatio-temporal continuity' (Hull, 1978) or are one material object.[30] This is one main reason why we are tempted not to consider ant-colonies organisms; the ants are spatially dispersed. It is also a main point of dispute with those who, analogously to the 'extended mind' theory (Clark, 2008), want to include an organism's constructed niche, such as the fox's burrow, the bird's nest or the human's house, as part of the "extended organism" (Turner, 2000).

[28] This is one explanation why 'maternal-fetal conflict' is so much more frequent than 'maternal-kidney conflict' (e.g. Haig, 1993). But that does not undermine the earlier point; maternal-fetal conflict is still pathological, promoting neither the fosters nor the gravida's fitness.
[29] See also Section 3 (objection 1).
[30] There is a debate whether organisms are objects; Dupré (2012) argues they are processes (see also Whitehead, 1933). I do not consider such views here.

Are fosters spatially continuous with the rest of the gravida? Yes. As we already saw in the discussion of Smith & Brogaard (2003), the placenta and umbilical cord both grow directly out of the fosters abdomen and into/out of the maternal uterine tissue. There are thus no spatial discontinuities between foster and gravida – not even a separating membrane – and the foster is not recognisably spatially bounded: it is is hooked up, or rather hooked into, the gravida not just metabolically and functionally, but also topologically.

4. Immunological Tolerance

A fourth common way of delineating and understanding the organism, is to consider what the organism immunologically tolerates, where 'immunology' is to be understood broadly (Tauber, 1994; Pradeu, 2010, 2012).

Fosters are immunologically tolerated by the organisms pregnant with them; mammals are actively set up so that, on the whole, the foster is not attacked by the immune system during pregnancy – though of course, like any other system, this can and does malfunction. This active set-up towards immunological non-rejection signals acceptance by the organism of the foster as part of itself. (Pradeu, 2012; Howes, 2007).

One might object that this acceptance is achieved, not by recognition of the foster as 'self' by the immune system (with the caveat that 'self-recognition' is a highly simplified way of conceptualising the immune-system – cf Pradeu, 2012), but by shielding the foster from the immune system – in part through the maintenance of separate cardiovascular systems. It is true that that is how 'acceptance' is achieved. But that does not show that the organism does not immunologically integrate the foster. This is just the best way for the organism to

realise that integration, whilst also maintaining a very good immune system. Compare, for example, the blood-brain barrier which partially shields the brain from the immune system. This is a way for the organism both to have a very powerful immune-system, and to protect from the correct workings of that immune system those parts of itself – such as the brain – that would be particularly vulnerable to the correct workings of that immune system. Thus the blood-brain barrier protects the brain from the damage done by inflammation, by stopping most anti-bodies, as well as many immune cells, from entering brain-tissue. In a similar way, the relative shielding of the foster from the immune system is the way in which the organism maintains a very powerful immune system, whilst also engaging in the having of parts and engaging in activities (brain, foster, reproduction) whose full exposure to the immune-system would be detrimental. This does not stop us from recognising the brain as part of the organism, nor should it stop us from recognising the foster. Indeed because immunological shielding is active (Howes, 2007), it is more fruitful to think of blood brain barrier and the placenta as part of the organism's immune regulation: it is the way that the organism has found to accommodate its foster-part within the context of the workings of its own immune system.

Nor is the shielding is complete. Antibodies, for example, do traverse the placenta, and by passing on its immunity, both during pregnancy and perhaps even after birth through lactation, the maternal organism continues to protect her newborn after birth.

Four criteria combined.

According to these four recurrent criteria for the delineation of organisms, the foster is part of the gravida . When does the foster cease to be such a part? On three of the criteria, birth marks that moment. At birth, foster and gravida cease to be one topologically singular material object (criterion 3); it largely marks the end or destruction of the active set up by which the gravida includes and immunologically tolerates the foster – although antibodies in breast-milk may maintain some shared immunological activity (criterion 4); and it means that the foster is no longer part of the internal environment of or autonomous homeostasis-maintaining unity that is the gravida (criterion 1). Rather, post-birth and all being well, now-baby and now-mother are two different homeostasis-maintaining units, and two different topological entities, each of which has its own internal environment, living in similar external environments.

The story according to criterion two, metabolic unity and functional integration, is a bit more complex: one could certainly make the case that functional integration does not cease upon birth, but persists beyond it, gradually diminishing over time. Although the duration of this varies considerably from species to species (compare humans and guinea pigs), all baby-mammals are heavily dependent on parental care. Active functional integration of the other's need (think of e.g. hormonal control of lactation in the mother and uniquely identifying calls in seal pups). Similarly one could argue that metabolic integration does not fully stop at birth: when breastfeeding exclusively, mother and offspring may continue to be one metabolic (and, to a small extent, immunological) unit,[31] and the regulation of lactation quantity and

[31] I am grateful to anonymised for this observation.

response between mother and offspring is cooperative and functional. This may well be considered, still, to be direct metabolic regulation.

On the other hand, birth does, at the very least, mark a sudden and very substantial drop in both functional integration and metabolic regulation: the baby starts breathing – thus regulating its own oxygen supply – it starts using kidneys in earnest, it quickly starts regulating its own temperature, gains a microbiome and thereby digestive abilities, and so forth. Taken together, then, the criteria suggest that birth marks the end of the foster's being part of the gravida.

Objections

First, one might question the content of the criteria. That is certainly possible, but to defend or critique a substantive position on criteria for the organism is beyond the scope of this paper.

Second, one might object by appeal to parasites. Consider, for example, a tapeworm. Tapeworms are definitely inside the organism's internal environment; integrated in its metabolic system; and may even successfully shield itself from the immune system. One could even argue they are topologically integrated. But, surely they aren't part of the organism? Even if such argument could be made, however, crucial differences between tapeworms and fosters remain: tapeworms aren't actively functionally integrated. Unlike the tapeworm, it is just not true that fosters antagonistically exploits or – as Oderberg (2008: 266) puts it - "uses its host". Fosters and gravida rely on each other for the promotion of their fitness: foster relies on the rest of the gravida for everything, but gravida relies on the foster to 'realise' its considerable

reproductive investment. The gestating of fosters, unlike the hosting parasites, is what female mammals seek out to do, initiate, and actively facilitate. It is a functional and essential part of their lifecycle, indeed their main means of realising their main evolutionary 'goal': leaving offspring. Fosters really aren't parasites.

But, third, and in response, not all 'parasites' are parasitic; some manage to make themselves indispensable to the organism; others are sought out because their cooperation is essential and mutualistic. Revisiting the earlier observation that a foster's 'evolutionary interests' do not fully coincide with that of the gravidae, one might thus attempt to rebuild the case by arguing that fosters are, at best, akin to mutualistic parasites, living in (temporary) symbiosis. Such a view gets us into extremely contentious territory, however. First, the assumption that such mutualistic parasites aren't part of the organism is highly controversial, and takes us straight to the heart of contemporary debates over levels of selection, biological individuality and organisms: at least some would argue that in certain cases of symbiosis, the symbiotic community *is* the organism.[32] These are complications and debates, however, that neither would, nor could, be settled here. Second, the foster is, at least in one sense, utterly unlike mutualistic parasites or other examples of symbiosis: foster and the rest of the gravida belong to the same species. More than that, they are part of one reproductive lineage: one is the offspring of the other. This means that foster and gravida do not just mutualistically rely on each other for the promotion of their inclusive fitness; they each appear as a component in each other's fitness

[32] See e.g. Hutter et al (2015). On such views the colonization of the baby at birth by the maternal microbiome is a further interesting factor to consider; but that is beyond this paper.

functions. Whilst this line may be pursued, then, it relies on substantial and controversial positions in on-going debates in philosophy of biology – which are beyond the scope of this paper.

Third, one might question the relevance of the criteria to the question at hand, either because the criteria may not seem fully pertinent to questions about what is part of the organism, or because they might seem focussed on distinguishing organisms of different species rather than – as in our question – distinguishing different generations of organism in the same species. But both concerns can be met. The literature on biological individuality is concerned with at least two types of questions: first, distinguishing organisms from higher levels of organisation/individuality – such as colonies or groups – and lower levels of organisation – such as organs, cells and organelles (Pepper and Herron, 2008). Thus accounts of the organism do not just give insight into what counts as their parts, but are directly relevant to such questions: whether human cells are best characterised as organisms or part of organisms (the latter); ants as organisms or part of a larger organisms (who knows!); and our gutbacteria as organisms or part of a larger organism (possibly both?). Second, and in response to the second worry, the literature does focus on distinguishing individual organisms of the same species – including distinguishing parents and offspring. It does so, however, mainly in the context of plants, fungi and asexually reproducing animals. Once again these questions, are related to concerns about parts and wholes: questions about clonal growth versus reproduction – as in budding strawberry plants, for example – are also questions about parts and wholes.

Interim Conclusion

If we take our four recurrent criteria for organisms at face value, the foster is a part of the gravida. This gives us a very strong initial case in favour of the foster's being a part of the gravida. But that does not mean the story ends there. Once we start digging deeper into debates about organisms and biological individuality, however, we not only enter difficult territory where the parameters aren't clear, but we find that considerations of the foster raises its own set of distinctive questions that overlap with questions about mutualism and symbiosis, as well as the sorts of questions that we find in plant biology about distinguishing organisms that form part of the same reproductive lineage. I thus want to finish this section with two observations. First, that we have, as we didn't have before, an initial strong set of arguments in favour of the part-whole claim: established frequently recurring criteria for the organism support it. Second, that the foster does not just generate interesting questions in metaphysics, but also presents a genuinely and possibly novel set of questions for current debates surrounding biological individuality, which it may well challenge or alter. This is another interesting upshot of considering the metaphysics of pregnancy, further discussion of which will have to be postponed.

3. Objections

Although I think that I have presented a strong case in favour of the part-whole model, I know that there are at least four objections on your mind, which you believe to be very *obvious* reasons that fosters are not part of the gravida. Let me dispel the myth.

1. Genetic Difference

First, you may argue, the foster cannot be part of the gravida because it has a different genetic code.[33] Admittedly, this is one frequently recurring criterion[34] in discussions of the organism that I have not yet mentioned. But it is not a convincing one. First, many parts of your body do not have your genetic code anymore: e.g. your hairs and your red blood cells. Second, some parts of your organism has always had a non-unified genetic code. Not only because, if you include your micro biome, 90% of 'your' DNA is of non-human origin, but also because of *micro*chimaerism: the small-scale mixing of different genetic cell lines in one organism. Microchimaerism is often caused by pregnancy, when fetal cells traverse the placenta and stay behind in the mother's body, sometimes up to decades after giving birth. Through similar processes fosters often end up with some maternal cells, and in the case of twins – because of placental transfers – with each other's cells and blood. I see no reason why any of these cells, which appear to integrate in the body, are not part of your body. This illustrate that your organism is not and need not be genetically unified. Third, if I receive a donation of blood, bone-marrow, or a kidney, then I see no reason to think these do not become part of my organism – but they would, again, result in my having parts with different genomes. Fourth, there are more serious cases of macrochimaerism: sometimes two blastocysts, that might have become dizygotic twins, merge in the womb to form one human organism. This human organism comprises cells of two distinct genetic lineages – their kidneys, for example, may contain genetic material from the one zygote, their brain from the other. It seems deeply implausible to deny that this would be one organism. For further reasons

[33] First put to me by (anonymised) – and since repeated by many.
[34] Pepper & Herron (2008).

to reject a genetic essentialist view of organisms, see e.g. the classics of developmental systems theory, (Oyama, 1985 & Oyama et al 2001).

2. Future Detachment

Second, one may object that fosters cannot be part of you now, because they clearly will not be part of you in the future. There are two versions of this argument.[35] First, one might think that that *viable* fosters, i.e. fosters that could be born and survive as babies, are not part of you because they could live as non-parts. But this argument contains an obvious fallacy: it conflates a modal property with its realisation. The fact that a glass could be broken does not mean it is broken now; it is merely *fragile.* Nor does the fact that I am mortal make me dead. Indeed, I have many parts, such as hair, blood or kidneys, that could be separated from me; that doesn't stop them being a part of me now.

Second, one may think it is relevant that the foster *will* become separate, and has a future of its own. On its own, this objection suffers the same problem: I am not just mortal; I *will* die. I also have many parts that I *will* loose: skin cells, hairs, molecules; that doesn't appear to stop them being part of me now. Moreover, if it did, little – possibly nothing (think of the molecules!) – would remain of me. If, however, this objection is a version of the view that parts could not persist through their separation, then please see my earlier comments on this on p. 13/14.

3. Moral Relevance

Third, one might argue that fosters are not part of gravidae because they have some special moral relevance. Throughout the essay I have assumed what strikes

[35] I am grateful to (anonymised) for pressing me on this distinction.

me as a plausible view: that what is part of an organism – which I take to be a metaphysical fact – is not determined by moral, or indeed social or psychological facts. (And let me emphasise again that such a view is compatible with the claim that parts are very different from each other. There are many ways, including moral ones, in which kidneys are not like hearts, brains, hair, nails, sperm or skin-cells. And thus there may be many ways, including moral ones, in which fosters aren't like kidneys, or any other body-part).

But my assumption could be challenged. One could believe, for example, that what is part of the organism is not something that admits of deep metaphysical answers, but is a mere matter of convention – and as a convention, it may vary with place, time and context. One could also hold the view that the answer about organismic parthood is indeed a metaphysical one, but that the metaphysical facts aren't immune to social and moral facts. Such a view may seem surprising – or even contradictory – because some will maintain that if (some of) the relevant facts are social and moral, then the question, by definition, isn't metaphysical – or at least not *deeply* metaphysical (e.g. Sider, 2011). But there are others who vociferously reject that idea, arguing that one can do metaphysics – such as the metaphysics of gender or race – where the relevant facts are entirely social (e.g. Barnes, 2014; Haslanger 200a, 200b).

If one were to take the view that social and moral facts are relevant to my question about the metaphysical relation between the gravida and the foster, then the facts I have considered in this paper simply do not come close to answering it. Whilst they still put significant pressure on the fetal container model, and would aid those arguing against it, they can hardly be taken to

establish or even build a strong case in favour of the alternative, part-whole model; far too many additional considerations would have be relevant, which I could not begin to consider in this paper. Such a view may also place into doubt the assumption that a single, non-context dependent answer to my question can be given. Consider, for example, metaphysical views about persons that contend that personhood is dependant on certain contingent social facts such as the social conferral of personhood (e.g. Baier, 1985; Kittay, 2005), or the standing in a rearing relationship (Tannenbaum & Jaworzka, 2014). On these views, personhood can vary with time, place, context and the attitudes of the individuals involved. One could imagine someone developing and defending a similar kind of view about organismic parthood, where the metaphysics of organisms depends on certain contingent social facts – for example a woman's own interpretation and construal of her pregnant experience.[36] On such an imagined view, questions about organismic parthood become far too complex to solve on the kinds of considerations discussed in this paper.

4. Intuition

Fourth, one might simply think it is *intuitively obvious* that fosters are not part of gravidae, and that at birth a baby moves location, rather than a part gets separated. At this stage in the proceedings I have little patience with this 'objection'. First, why rely on intuitions if I have given you arguments? Second, criticisms of the fetal container model have meticulously documented the powerful social and historical forces involved in creating the fetal container

[36] I am grateful for an anonymous reviewer of this journal for suggesting such a possibility to me.

depiction of pregnancy[37], which give us substantial reason to question how our intuitions have been formed; they do not emerge out of nowhere, unshaped by our culture or society. So what reason do you have to trust that your intuitions are a guide to the truth, rather than a reflection of your socio-cultural conditioning?; whether fosters are part of gravidae is hardly a conceptual or linguistic matter. Third, and in support of that, in different historical periods and in different cultures[38], people (intuitively!) view things quite differently. Fourth, whose intuitions? Women, and in particular pregnant women and mothers, have hardly had a dominant voice in the formation of social, medical or philosophical knowledge-claims or intuitions. And whilst I don't claim that all women would naturally 'intuit' a part-whole view, nor that their intuitions aren't, also, shaped by culture and society, there is at least some reason for thinking that if we pay due concern to what women intuit about their own pregnancies, the fetal container depiction does not emerge as quite so 'intuitively obvious'. Several female philosophers who have written about pregnancy, provide us with a the picture that is distinctly un-container-like: metaphysically messy and ambiguous (Young, 1984; Kristeva, 1993; Irigaray, 1985; Howes, 2007), active and agential (Ruddick, 1994; Lindeman Nelson, 1994), constructed and transitional (Bergum, 1997) and characterized by intimacy and intertwinement (Little, 1999; 2005). Even Judith Jarvis Thompson, of violinist fame, writes: "[a] woman may be utterly devastated by the thought of a child, *a bit of herself*, put out for adoption and never seen or heard of again." (Thompson 1971:66 - *my emphasis*)

[37] See e.g. Arney, 1982; Bergum, 1997; Casper 1998; Dubow, 2011; Duden 1993, 1999; Katz-Rothman, 1994; McClive, 2002; Oakley 1984 and Petechesky, 1987.
[38] Some Talmudic scholars, for example, consider the foster a part of the mother until birth (Rosner, 2001, p 180).

The part-whole model deserves a hearing.

4. Conclusion

This paper has articulated and begun to examine a hitherto unconsidered question: is the foster part of the gravida, or merely contained within it, the way the metaphorical bun sits in the oven? On the considerations discussed in this paper, and on the assumption that the answer is immune to social and moral facts, I conclude that the part-whole model has the firm upper hand and is a view that needs to be taken seriously: many biological and physiological considerations speak in its favour. The fetal container model, by contrast, has little, if anything, going for it; arguments in its favour either presuppose or speak against the model. This means we that we lack justification for the widespread acceptance that it currently seems to enjoy, and that if the view is to be taken seriously, some compelling arguments need to be mounted in its favour.

That is not to take a conclusive stance in favour of the part-whole view, however. This paper is merely a first attempt at addressing this question and much of what has been said not only stands in need of further research, but raises interesting questions in their own right. Questions that require further research (1) the interpretation or replacement of this paper's central question on ontologies that do no think that there are organisms, kidneys, and that kidneys are parts of organisms – as well as the arguments relevant on such views; and (2) questions about organismic individuality in the context of mutualistic interdependence, genetic relatedness, and sexually reproducing

lineages – a domain in which considerations of the foster, as discussed, may raise its own set of interesting and peculiar questions.

The part-whole claim also raises further independent questions. One of these is that, should the part-whole claim be correct, the story we ordinarily tell about the coming-into-existence of the foster and/or organism may well have to be re-written. What is the status of sperm – does it become part of gravida? Or is the ovum part of the maternal organism or does it cease to be a part upon ovulation to combine with sperm, resulting in a later entity becoming part of the gravida only at implantation? And does it matter whether the ovum, sperm & zygote never leave the gestator's reproductive tract – or is conducting the process in a petri-dish metaphysically significant? These are important and interesting questions, but I cannot answer them here, which is why I remain noncommittal about the beginning of the foster.

The part-whole claim may also give rise to questions in ethics and law, insofar as these domains presuppose a fetal container model of pregnancy. For example: some moral and legal rights and principles, such as rights to self-determination and bodily autonomy as well as standard constraint against interfering with others, seem to presuppose that we have separate bodies. It is an open question how, if at all, these are to be applied to a situation where organisms are part of other organisms.

Finally the view may have implications for persons. But, again, what these are is far from straightforward. Positions on personal identity and personal ontology are highly varied, and any inference from the part-whole claim to claims about persons must depend on additional, and almost certainly controversial, further

assumptions and substantive views in this domain. This is why the answer to the paper's title- question is ultimately beyond its scope. With one exception: animalists maintain (1) that we are organisms and (2) that we were once fetuses. If the part-whole claim holds, and they insist on claim (2), then animalists at least are committed to a straightforward answer. Yes, you were a part of your mother. For if we are organisms, which were once fosters, and fosters are part of gravida, then we were, literally, part of our mothers. This may strike us as a counterintuitive and metaphysically complex claim. It may be counterintuitive to conceive of *ourselves* once having been part of our mother and it raises the question whether, from the perspective of our mothers and pregnant women more generally, a person or human entity that was or is part of oneself can properly be conceived of as another. On the other hand, maybe the claim isn't counterintuitive at all. In her influential essay on pregnant embodiment, Young (1984:50) writes:

> "Later I look with wonder at my mushy middle and at my child, amazed that this yowling, flailing thing, so completely different from me, was there inside, *part of me*" (*my emphasis*).

Such a statement, and ones like it, are widely seen as metaphor. But if we combine the part-whole claim with animalism, then they can be given a literal interpretation.

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