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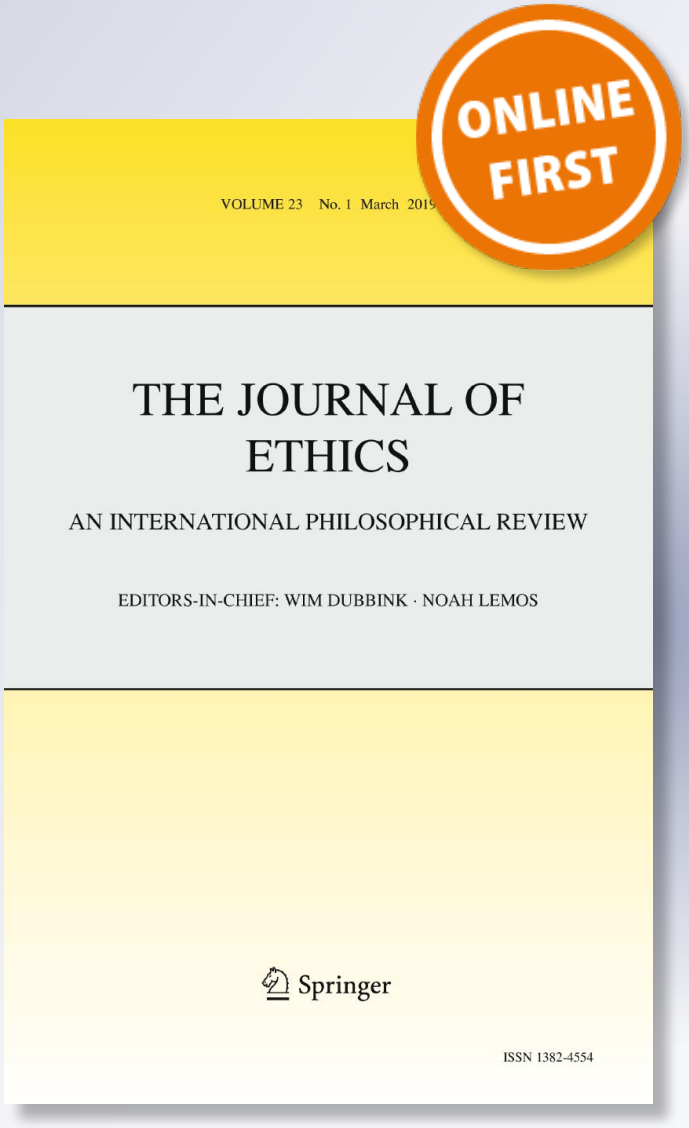

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Animalism, Abortion, and a Future Like Ours

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Abstract
Marquis' future-like-ours argument against the morality of abortion assumes animalism—a family of theories according to which we are animals. Such an assumption is theoretically useful for various reasons, e.g., because it provides the theoretical underpinning for a reply to the contraception-abstinence objection. However, the connection between the future-like-ours argument and one popular version of animalism can prove lethal to the former, or so I argue in this paper.

Keywords Animalism · Abortion · Identity · Future-like-ours argument · Biological individuality · Personal ontology

1 Introduction

'We are animals', the animalist says.[1] Besides, there are versions of animalism according to which the identity conditions of human animals are the same as the identity conditions of human organisms, and versions according to which the identity conditions of human animals are the same as the identity conditions of *living* human organisms.[2] In what follows, I take animalism to be a family of views, the core tenet of which is simply that we are human animals—we are animals not in virtue of, e.g., being constituted by a human animal but because we are each one

[1] See Snowdon (1990, 2014), Olson (1997a, b, 2004, 2007, 2015), Van Inwagen (1990) for contemporary formulations of animalism and Carter (1982) and Wiggins (1980) for some of their ancestors. Mark Johnston's works are also frequently associated with animalism; for instance, see Johnston (1987). Recent surveys include Blatti (2014), Bailey (2015), Sauchelli (2018a: Chapter 5), and Thornton (2016). DeGrazia (2005, 2012) provide further discussion on the connection between animalism and various issues in bioethics.

[2] See Mackie (1999) and Tzinman (2018) for the view that an organism can persist as a dead organism. On this understanding of the consequences of the identity conditions of organisms, animalism entails that we can become corpses (dead organisms). I will not discuss this version of animalism in the rest of the paper.

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human animal. Not all versions of animalism, however, also imply that we are *essentially* animals.[3] Nonetheless, in either its modal ('we are essentially animals') or non-modal version ('we are animals'), whether animalism is the correct or best theory of our nature is important for the debate on the morality of abortion.[4] In particular, adopting at least one version of animalism is crucially important for one of the most widely discussed secular arguments against the morality of abortion, namely, Don Marquis' future-like-ours argument.[5]

This paper has two main objectives. The first is to discuss the connection between (some versions of) animalism and the future-like-ours argument against the morality of abortion.[6] The second aim is to raise an objection against the future-like-ours argument that comes from adopting an elaboration on one of the most popular versions of animalism, that is, a combination of Eric Olson's and Peter van Inwagen's theories of what we are (what I call 'Olson-Van Inwagen Animalism', or 'OVA'). A third, more indirect, objective of this paper is to provide an example of how metaphysical theories of our nature are relevant to debates on the morality of abortion.[7] The first objective is addressed in Sect. 3, which contains an analysis of Marquis' argument. This analysis follows a discussion of animalism and of the identity conditions of organisms in Sect. 2. The main gist of my argument against Marquis' in Sect. 4 is as follows. Let us assume Marquis' deprivational account of harm and his reply to the contraception objection. On one understanding of OVA, a human organism at t_1 is the same human organism at t_2 iff their parts participate in the same life. Given these conditions of numerical identity over time of human organisms, a plausible case can be made to the effect that, when relevantly connected, an unfertilised egg, a zygote, and an embryo all take part in the same life.[8] If contraception or abstinence prevent an egg from having a future like ours, they are morally wrong, given that we are human organisms and that the organisms we are now were once eggs. However, contraception or abstinence are not morally wrong. Hence, Marquis' argument is not sound. My main point is that Marquis' reply to the contraception objection—which will be discussed in detail below—may fail because of his commitment to animalism.

One of the most controversial points at the heart of my arguments, i.e., the idea that an unfertilised egg at t_1 is a persisting substance that is or constitutes an organism that is one of us, is defended in Sect. 4. The arguments in Sect. 4 can also be considered instrumental to the clarification of a better version of the future-like-ours

[3] Sauchelli (2017) includes several distinctions between essential and non-essential animalism.

[4] Boonin (2003), DeGrazia (2012), McMahan (2002) and Steinbock (2011).

[5] The original argument is in Marquis (1989). Subsequent versions—all theoretically nearly equivalent—are proposed in Marquis (1997, 2002, 2006, 2007, 2013).

[6] See also Vogelstein (2016) and Sauchelli (2018b).

[7] See Conee (1999), Mills (2013) and Shoemaker (2007).

[8] The terms 'zygote', 'embryo', 'pre-embryo', and 'foetus' are not used consistently in the literature. In my usage, some of the stages that they refer to may overlap. I use 'pre-embryo' to refer to the (alleged) entity that is supposed to exist after fertilisation but before the fourteenth–sixteenth day after fertilisation. A zygote is a fertilised egg. The developing individual is regarded as an embryo from after the pre-embryonic stage to the eighth or ninth week after fertilisation. After this period, some medical texts call the developing individual a foetus.

argument, namely, a version that includes a different specification of the synchronic and diachronic conditions of numerical identity of human animals.[9]

2 Animalism, Life, and Identity

The animalist, *qua* animalist, simply holds that we are animals and is not committed to a specific view of the synchronic and diachronic conditions of numerical identity of (human) animals or organisms. Sometimes animalists claim that their thesis concerns our *fundamental* nature and that the claim 'we are animals' should be understood as a claim of numerical identity. In fact, other theories (e.g., Sydney Shoemaker's constitutionalist view) may also hold that we are animals, but the sense in which, for example, the constitutionalist uses 'are' in this context is not that of numerical identity or predication but that of constitution.[10] In particular, the constitutionalist claims that we are animals in the sense that you and I are each *constituted by* a different animal. Our nature is that of psychological entities, that is, we are entities the identity conditions of which must include reference to some psychological properties. Now, Olson maintains that we are animals, not in the sense of being constituted by animals, and that animals are biological organisms.[11] I take it that OVA is also characterised by the claim that our diachronic identity conditions are those of living human organisms. The next task is thus that of clarifying the identity conditions of organisms.

In a recent survey of the literature, Ellen Clarke distinguishes at least thirteen of these conditions, some of which are not equivalent, currently used by biologists and philosophers of biology.[12] For example, the conditions of identity of organisms are said to involve (1) the existence and continuity of policing internal mechanisms (organisms or biological individuals are the minimal units closed under this condition), (2) histocompatibility, (3) a single life cycle, or (4) spatial boundaries or contiguity. According to Olson, the following features are characteristic of organisms:

- A dynamic stability: after having reached a certain level of maturity, organisms tend to maintain the same form and structure through the continuous exchange of material with the environment.

[9] The synchornic conditions of identity of an individual are here understood as the conditions that an entity should satisfy at a time to count as the individual it is (e.g., having mental properties to be a person). The diachronic conditions of identity of an individual specify those features that an entity should possess to continue to be what it is (e.g., having some properly connected memories to count as the same person over time).

[10] See Evnine (2011) for a recent critical introduction to the notion of constitution. I assume that constitution is a one-to-one relation (while composition can be a one-to-many relation) and that the identity conditions of a constituent and what is constituted may differ as, for example, in the case of a statue and the lump of clay that constitutes it.

[11] Olson (1997a, b, 2007: 27–29, 2015).

[12] See Clarke (2010). Other recent discussions include Boniolo & Carrara (2004), Dupré (2014), Guay and Pradeu (2016), Hull (1992), Pepper and Herron (2008), Pradeau (2010), Wilson (2010) and Wolfe (2010).

- Teleology: the parts of an organism are organised in an internal teleological manner (e.g., the respiratory system to exchange gases).
- Organised complexity: the extremely intricate internal structure of an organism is regulated by a complex set of basic operating instructions (e.g., our genetic code and what is necessary to express it).[13]

Olson further maintains that *human* organisms are concrete particular, persist through time, and have lives. These latter two features—persisting through time and having a life—are connected because the persistence of the life of a human organism, which is a biological *event*, seems to correspond to the persistence of the relevant organism.[14] In particular, he seems to hold that there is a one-to-one correspondence between organisms and lives.[15] In general, a life is the life of an organism when its temporal parts are events the constituents of which contribute to the same dynamic, teleological, organised, and self-directing biological event. The connection between the notions of a human organism and of a life is not to be taken as a conceptual analysis of the former in terms of the latter; rather, it can be understood as a correlation or, as Olson puts it, as a causal or enabling connection.[16] More specifically, he maintains that the life of an organism enables the relevant organism to persist.[17] Based on these considerations, we can formulate the following conditions of diachronic identity for human organisms:

> For all t, a human organism P at t_1 is the same human organism Q at t_2 iff the parts or substances that compose or constitute organism Q at t_2 take part in the same life of which the parts or substances that compose or constitute organism P take part at t_1.[18]

The version of animalism under consideration here, OVA, includes the above conditions of human animal identity and holds that we are essentially living human organisms.

[13] Olson (1997a: 126–131). In what follows, I will focus only on the identity conditions of *human* organisms.

[14] I will not discuss the distinction between events and processes here and will freely re-phrase some of my formulations in terms of each. See Stout (2003) and Steward (2013) for recent works on their difference(s).

[15] Olson (1997a: 137).

[16] One of the reasons is that someone may hold that questions about the numerical identity of organisms are better settled than questions about the numerical identity of lives.

[17] Olson (2007: 28).

[18] Olson thinks that we should refrain from using the concept of constitution in metaphysics. My use of the concept here should not be taken to suggest that it is part of the 'canonical' formulation of Olson's version of animalism.

3 Marquis' Future-Like-Ours Argument

One reconstruction of Marquis' argument against the morality of abortion runs as follows. (1) Killing one of us is presumptively wrong because it deprives one of us of a future of value—on the assumption that our futures are generally valuable. (2) A foetus is one of us. (3) A foetus has a future like ours (from premise 2 and from the assumption that we have each a future of value). (4) Abortion deprives the foetus of a future of value. It follows that (5) abortion is immoral (presumptively wrong).[19] Marquis repeatedly emphasises that his argument may not apply to cases in which the foetus is not yet an individual or an individual with a valuable future.[20]

An important theoretical stance adopted by Marquis is one version of the deprivational account of the wrongness of killing or, more precisely, his specification of one sufficient condition for the wrongness of killing.[21] In particular, the main idea of the first premise is that an individual (in this case, one of us) is harmed if it is deprived of something. More precisely, on this view, killing is wrong because it deprives a victim of something that is, can be, or would have been valuable.

In addition, Marquis explicitly makes the following claim:

> we know that foetuses *have* futures of value because we were all foetuses once and their futures of value are the goods of our past lives, our present lives, and our future lives. (I am assuming that we are biological organisms. […]).[22]

Since the foetus is a human organism, it is already one of us, and it has a future like ours. Marquis may thus claim that his argument is not a potentiality argument in the sense that the foetus is an entity that already has a future like ours.[23] Marquis holds that existence is a necessary condition for an individual to have a future of value and thus to be harmed.[24] Dialectically, this is an important point because Marquis does not believe that contraception or abstinence are morally wrong. More specifically, an unwelcomed consequence of the future-like-ours argument can be that if it is wrong to deprive an entity of a future like ours, then contraception or abstinence may also be morally wrong.[25] The reason is that by using contraceptives or by not fecundating all possible gametes, we deprive entities of a future like ours—for example, we harm those entities that could come into existence (and have a future

[19] Marquis (2007: 400).

[20] "Accordingly, morally permissible abortions will be rare indeed unless, perhaps, they occur so early in pregnancy that a fetus is not yet definitely an individual" (Marquis 1989: 194). "Such cases [i.e., possible exceptions to the cases discussed by Marquis] include abortion after rape and abortion during the first 14 days after conception when there is an argument that the fetus is not definitely an individual" (Marquis 1997: 83). Marquis slightly modifies his argument in (2013), but I do not think that what he says there is substantially different from my reconstruction of the main core of his argument.

[21] See Bradley (2004), Feldman (1992) and Nagel (1970) for discussions on the deprivational account of the harm or badness of death. McMahan (2002) is an extensive study of the ethics of killing.

[22] Marquis (2007: 399).

[23] See Harman (2003) for a discussion of the moral relevance of potentiality.

[24] See Bradley (2009), Setiya (2014) and Silverstein (2013) for discussions.

[25] See Norcross (1990).

of value) had we not used contraception or refrained from fecundating eggs.[26] However, Marquis argues that since such entities do not exist, we cannot harm them.[27] In addition, it is not wrong, e.g., to use contraceptives because destroying eggs or sperms does not deprive entities of a future of value. Thus, even if all of the premises of the future-like-ours argument are true, it does not follow that contraception or abstinence are presumptively wrong.[28] In short, Marquis has to claim that before the specific event in which the proper subject of harm S—the deprived entity—is metaphysically individuated, which in our case is sometimes supposed to take place several days after fertilisation (i.e., after contraception and abstinence), S does not exist and thus cannot be deprived of a future like ours.

In the next section, I advance a series of arguments to the effect that adopting OVA is not effective when assumed as the theoretical basis of a reply against the contraception-abstinence objection.

4 Animalism, the Egg, and the Contraception Objection

Many supporters of animalism seem to concur that a single-cell zygote is not uniquely individuated, at least not in the way *we* are. Barry Smith and Berit Brogaard (not animalists themselves) offer a sophisticated defence of the idea that the zygote should be regarded as a substance formed by the unification of two different substances (an egg and a sperm). They also claim that a zygote's life is relatively short, as its topological connections are quickly disrupted and several other substances are produced by a process of separation. In turn, these separate substances are unified again into one (blastocyst stage), and, according to Smith and Brogaard, a part of this new substance will form another individual substance (the inner cell mass that will become the embryo). The gradual formation of what Smith and Brogaard call "a bone fide boundary" (a natural, non-conventional boundary) produces a new form of organisation amongst specialised cells. These cells, taken in isolation, lack the capacity to generate different individual substances that can produce new pre-embryos.[29] Although animalists are seldom so specific about the ontology of our early stages of development, they seem to hold that a single-cell human zygote is not the same biological individual or organism that is one of us. It is only when a group of cells starts to function as a single, more tightly integrated unit that we may

[26] I will assume that abstinence and contraception are morally equivalent for our purposes here.

[27] See Bradley (2009) for discussion.

[28] Contraception or abstinence may be wrong for other reasons, just not for those directly relevant to Marquis' argument. Marquis claims that "[t]he matter that is important concerns the moral implications of the fact that the embryo that is the precursor of the present stage of me is one thing whereas the sperm and UFO [unfertilised ovum] that are the precursors of the present stage of me are two things. MP appears plausible because it seems plausible to base the wrongness of killing on the loss to a victim of her, not someone else's future. A necessary condition of this being so is that the future life that is lost would have been the actual life of the same individual who dies prematurely, and who was, therefore, the individual who was only the 'bearer of that potential'" (Marquis 2002: 77–78).

[29] See Smith and Brogaard (2003: 75). See also Morris (2012) for a good criticism of the application of a substance-ontology to the metaphysics of human development.

identify this organism with someone like us.[30] However, I suggest that, on one plausible reading of OVA's conditions of human animal identity, the creation of a human egg amounts to the creation of a substance or individual—the egg or an organism constituted by the egg in its initial stage—that, under the right circumstances, will undergo a series of changes that will transform that same substance into a foetus and subsequently into an adult human organism. Assuming OVA, Marquis' argument would have a problem because if we were eggs, then eggs had and presumably have each a future like ours, and thus contraception or abstinence are wrong, which is absurd.

My strategy is as follows. First, I will argue that if we were each a zygote, then we were each an unfertilised egg since the zygote and the related unfertilised egg are the same substance or organism, or they are two substances that partake in the same life-event (and thus are parts of the same organism), or are substances that constitute the same organism. Call this argument the unfertilised egg-zygote argument.[31] Second, I will suggest that the zygote and the subsequent relevantly connected pre-embryo and embryo, provided that no divisions happen in the pre-embryonic phase, are the same substance or organism, or take part in the same life and thus are parts of the same organism, or constitute the same organism—the zygote-foetus argument. The combination of these two arguments implies that the unfertilised egg and the relevantly connected embryo are the same substance or organism, or different temporal parts of the same organism, or are different substances that constitute a persisting organism. Therefore, on the further assumption that we were each a foetus and that foetuses were embryos and pre-embryos, Marquis' argument would still imply that contraception or abstinence are morally wrong, which is absurd.

4.1 The Unfertilised Egg-Zygote Argument

Some of the following points are borrowed from Eugene Mills' astute discussion of the claim that if a zygote—a fertilised egg—is a substance, then the unfertilised egg from which it seems to derive is the same substance.[32] Mills' idea is that the unfertilised egg is the same entity (or substance) that is fertilised by a sperm and that becomes a fertilised egg. The claim that an egg does *not* become a fertilised egg, Mills suggests, seems to be plainly false; in particular, he describes the process of fertilisation as follows:

> Review some sex education materials, watch, via microscope, the fertilisation of an egg. You see an unfertilised oocyte—the one-celled human egg. A sperm

[30] For instance, Snowdon lists the claim that "[a]n organism or animal of our kind acquires life and existence somewhere during the period which starts with conceptions and terminates with the existence of the foetus" as one (relevant to his discussion of animalism) uncontroversial thesis, Snowdon (2014: 113). The 'somewhere' is what is at issue here.

[31] The three claims in the disjunction are not equivalent, but they are each sufficient for my purposes. See Hershenov (2016) for a discussion of animalism and four-dimensionalism (and the related temporal parts-jargon).

[32] Mills (2008).

> approaches and, after traversing the corona radiate and zona pellucida, contacts the egg's cell wall. The sperm breaches that wall, enters and dissolves, discharging its contents. The breach in the cell is immediately sealed. The most natural description of these events is that you've watched one egg become fertilised, not the annihilation of one organism and the creation of a new one.[33]

This description seems convincing. The egg, whether classified as a substance, an organism, or as an individual, does not seem to go out of existence once a spermatozoon, an entity ten thousand times smaller, breaches the egg's wall and discharges its genetic material into the egg. The best description of such an event is that the fertilisation of an egg is an event that brings about change in an entity, the egg, not its annihilation (at least not immediately). Mills claims that this process is more akin to a process of internal rearranging than the destruction of a cell.[34] In fact, the genetic materials of the two gametes come into close contact (and form male and female pronuclei) but this interaction does not seem to bring about the destruction of the egg or the interruption of the organism's life constituted by the egg. Rather, fertilisation is a slow and gradual process through which the egg acquires new capacities—and such capacities are acquired through the incorporation of external genetic material. In particular, the egg responds in various ways to the introduction of the spermatozoon: its metabolism is activated, its membrane becomes impenetrable to other spermatozoa, and the egg finishes its second meiotic division.[35] In short, the egg, whether classified as a substance, an organism, or simply as an individual, does not appear to go out of existence once a sperm breaches its wall. A 'look and see' argument based on observing the actual unfolding of the fertilization process runs as follows. Our experiential evidence suggests that at least one entity, namely, the relevant unfertilised egg, persists when fertilised. Hence, absent strong reasons to the contrary, the relevant unfertilised egg persists when fertilised.

Other reasons to support the previous way of describing fertilisation may come from the application of a line of reasoning adopted by Olson in a different context. In particular, Olson argues that one reason for preferring animalism over other views about our nature—as for example versions of the psychological approach to our nature—is the alleged theoretical advantage of implying that you and I were once foetuses.[36] In particular, according to versions of the psychological approach to our nature, we are essentially psychological entities; therefore, we did not come into existence until at least 25 or 26 weeks after fertilisation.[37] After all, according to embryology, the cerebral cortex, which is responsible for humans' higher mental

[33] Mills (2008: 328). See also Davies (2014), Findlay et al. (2007), Morris (2012), Sandler (2015: 39–42) and Schoenwolf et al. (2015: 33–42) for various descriptions of our beginning.

[34] Mills provides further reasons for believing in the identity between the fertilised and the unfertilised egg in Mills (2008: 332–333).

[35] This way of describing the event of fertilisation is taken from Sandler (2015: 40).

[36] DeGrazia agrees with the claim that psychological views of our nature have a foetus problem: these views seem to imply that we were never foetuses. See DeGrazia (2005: 31). The term 'foetus' is used here in a broad sense that includes any stage of early pre-birth human development.

[37] See Baker (2000, 2005) for one version of the psychological approach to our nature.

capacities, does not work as a functional unity before that time, and it is unlikely that the foetus is even minimally sentient at the early stages of its development. If we are essentially psychological entities, then we were not early foetuses. This conclusion, Olson maintains, is problematic. More specifically, suppose that you were not a foetus. Then, what happened to the foetus relevantly connected to you? Olson claims that if you believe that you came into existence only when certain mental functions began, then two things may have happened to the foetus: (1) the foetus ceased to exist or (2) the foetus continued to exist but did not become a person—since you are a person, and you were not a foetus. Olson maintains that the first option is not appealing because it implies that a normal foetus never becomes a normal adult human being. In particular, Olson makes the following claim:

> why, we should want to know, should a fetus perish simply because, in the course of carrying out the program encoded in its genes, it (or rather its successor) came to be able to think?[38]

This reasoning involves a conception of becoming for human organisms according to which, if a human organism carries out its own teleological programme, the acquisition of some further capacities does not necessarily destroy it—provided that these further capacities are an appropriately causally connected expression of the teleological programme of the organism. We can further say that a human organism may acquire new capacities and continue to exist as long as it maintains its (1) dynamic stability, (2) teleology, and (3) organised complexity. Call this principle the Becoming-through-acquisition Principle for the Diachronic Identity of Human Organisms (BPO).[39] This principle is plausible and seems to hold also for a variety of other organisms. The second option—denying that the foetus becomes one of us although it persists through time—would have undesirable consequences for those who deny animalism. In particular, it provides an ideal starting point for the thinking animal argument.[40]

Although certain versions of animalism may be formulated so as not to imply that we were (early) foetuses, I take it that OVA implies that human organisms were early foetuses—on this view, we are organisms that went through the foetal stage. OVA also seems to imply that the event that is the life of one of us is composed of the events involving an early foetus's development into a more complex biological individual. If we apply the BPO to include human cells, then it provides further reasons to believe that the main claim of this section is true: the egg is a cell, and cells do not necessarily go out of existence when their walls are breached, when

[38] Olson (1997a: 101).

[39] A negative version of this principle would be that a human organism does not cease to exist if it loses some of its capacities, provided that the above three requirements are satisfied. Call this the Becoming-through-loss Principle for the Diachronic Identity of Human Organisms (BLPO).

[40] The main steps of the argument are as follows: (1) Suppose that a foetus has developed into an adult human organism. (2) This animal is where you are now. (3) This animal has your nervous system; thus, it can probably think your thoughts. (4) Thus, you are this animal. Denying premise (2) would generate the too many thinkers problem; roughly, if you can think and the animal can think (premise 4), then there seems to be two entities thinking where you are now—which seems one too many.

they acquire new capacities, or when some of their capacities are activated. Thus, just from the fact that, for example, its wall is temporally breached and that some of its capacities are activated, it is not plausible to infer that the egg goes out of existence when the sperm breaches its cell wall. Quite the contrary, the egg appears to continue to exist with new or activated capacities—since it maintains its dynamic stability, teleology, and organised complexity. On the supposition that an organism is essentially an organism, and that a zygote (and what it becomes) is an organism, if the unfertilised egg is numerically the same entity as the zygote, it is plausible to hold that (1) they are the same organism, (2) their life-events are the same, or, at least that (3) they constitute the same organism.

The main point of this section is that fertilisation is an event that is part of the same life of an unfertilised egg and of a zygote. Now, depending on further metaphysical assumptions, we may then claim that the unfertilised egg and the relevant fertilised egg are (1) the same substance or organism, (2) temporal parts of the same organism, or (3) constitute the same organism—I will remain neutral with respect to which of these formulations is better. If the previous claims are correct, OVA implies that if we were each a zygote (in whichever way it is described), then we were each the corresponding egg.[41]

4.2 The Zygote-Foetus Argument

Even granted that the previous arguments may succeed, animalists do not generally endorse the claim that we were zygotes. Therefore, some may argue that even if a zygote and the related unfertilised egg are the same organism, it does not follow that we were unfertilised eggs because, for example, the zygote and the pre-embryo are not the same entity. As already mentioned, several animalists claim that we came into existence (at least) when the zygote became a pre-embryo or an embryo, say, 14–16 days after fertilisation—on this view, literally speaking, a zygote does not become an embryo but, rather, goes out of existence. The reason usually given in support of this conclusion is that the fertilised egg is not the same organism or substance as the organism or substance resulting from its several subsequent cellular divisions. In turn, one of the reasons, if not the main ontological reason usually given, behind this argument is that the fertilised egg cannot be identical to any of the resulting cells into which it divides. In particular, it is sometimes claimed that, since the zygote divides into two blastomeres, which in turn divide into other cells, there seems to be no reason to identify the zygote with either of the two resulting blastomeres or with both of them. Hence, the zygote is identical to neither; that is, it goes out of existence when it divides.

Now, if the previous reasoning presupposes that the synchronic and diachronic conditions of identity of an organism entail that for an organism to be the same organism through time, it must be composed of the exact same number of cells or even by the same cells, then the argument is flawed. First, it must be remembered

[41] In case (2) is preferred, we should slightly modify this last claim—if the zygote is one of my temporal parts, then also the egg is.

that unicellular organisms are recognised in biology; thus, it cannot be argued that a zygote or an unfertilised egg are not organisms because they are each a single cell. Second, consider OVA's definition of the identity conditions over time of organisms like us. The application of OVA's understanding of human organisms to our case can generate at least two lines of reasoning. First, material substances such as human organisms constantly change their specific cellular composition, including the number of cells composing them—after all, it is their way of persisting. Although the zygote is one cell, we may say that the zygotic stage is one of the unicellular-stages of an organism the life of which continues after cleavage—an event that brings about a change in the number of parts of the relevant human organism. In particular, we may claim that the human organism is first a unicellular organism and then an organism composed of two cells. Although a zygote may not be regarded as the same cell as either of the two blastomeres, we may still argue that all these cells take part in one and the same life. Further support for this claim comes from biology: the fertilised egg initiates a series of mitotic cell divisions (cleavage) that do not generate cell growth; rather, these divisions seem to *subdivide* the zygote (or fertilised egg) into blastomeres within one boundary—according to Schoenwold et al. (2015), "the embryo as a whole does not increase in size during cleavage and remains enclosed in the zona pellucida."[42] The spatial boundary, continuity, and strict collaboration amongst its parts all seem to suggest that at least one life-event is unfolding in addition to the life-events of each single daughter cell and their respective parts. We may even say that this process of 'division' can be better described as one in which there is one entity that is being internally rearranged by virtue of the biological contribution made by a spermatozoon (the life-event of which has come to an end)—and thus is not properly a case of fission. Therefore, I think that we have at least two plausible claims here: (1) the zygote and the blastomeres are temporal parts of the same organism, albeit at different times, and (2) the zygote and the *sum* of the blastomeres, *qua* organisms, are one and the same entity. I will not settle the question of which of these two descriptions is better, as they are both individually sufficient for my main reasoning. On the first view, since the two related blastomeres take part in the same life, the events involving their existence are also thereby stages or (temporal) parts of this broader life-event. In particular, the two related blastomeres also take part in the life of the organism in which the zygote also took part: the two blastomeres are two substances (or biological individuals) that compose one and the same organism.

On reflection, when we observe a zygote dividing, we perhaps observe the fission of a cell, but we are not observing the end of all life-events or processes; rather, we are observing another temporal part of at least one further persisting life-event. After all, there is a remarkable difference among cases in which (a) a zygote is destroyed and nothing is produced as a result of such a destruction (which would be the end of all life-events involved), (b) a zygote divides into two blastomeres that continue their life-events together, or (c) a zygote divides into two blastomeres that continue their life-events separately (if biologically possible). Given the previous description of the

[42] Schoenwolf et al. (2015: 35).

process of cleavage—which involves a common boundary, close spatial continuity, and strict collaboration among the parts of the zygote—the distinction between (b) and (c) is best described by saying that in (b) but not in (c), there is at least one persisting life-event—the life-event of a human organism. To secure at least two of the disjuncts of the main controversial premise of the argument in this section (i.e., that the zygote and the pre-embryo take part in the same life and thus are parts of the same organism or constitute the same organism), we may add that it is not necessary to deny that a zygote does not go out of existence when the pre-embryo is formed. In other words, we do not have to deny that the life of the zygote, regarded as an individual cell, comes to an end. However, given that there is a remarkable difference between (b) and (c), the best account of such a difference is that in the former, but not the latter, there is at least one further life-event occurring that is persisting—the life-event of a persisting organism. After all, in case (b), it is appropriate to say that there is a persisting and developing organism that is the direct causal outcome of the correct expression of the instructions contained in, for example, the zygote.[43]

It may be useful to compare the case at issue with a similar case: the splitting of an amoeba. I think we would describe the case of a splitting amoeba that results in two equivalent daughter cells going their separate ways as a situation in which the initial amoeba life-event ceases. One of the outcomes of this cessation is that two different life-trajectories begin. Now, this situation is significantly different from one in which the daughter cells of the fertilised egg continue their programme and generate *one* singular individual—zygotic cleavage seems to involve a significantly higher degree of spatial continuity, not to mention the tight connection between the resulting cells, which remain enclosed in the same membrane. One way of explaining the difference is that in the latter (zygotic division) while not in the former (amoeba splitting), at least one singular life-process continues to unfold. The case of an amoeba's splitting is more similar to the case in which the cellular division of a zygote generates two different life-trajectories. Again, I think that there is a difference between cases of, say, twinning and cases in which twinning does not take place, and such a difference can be better accounted for by claiming that, among other things, two different life-events begin only in the former.

Assuming the identity conditions of human organisms in terms of those described by the OVA, we can describe a typical case of a dividing zygote as one in which (1) the relevant zygote divides and (2) there is a continuing life, in particular, the life-event involving an organism or substance that is, first, a unicellular organism and then a multicellular one. Therefore, given OVA and the previous descriptions of the dividing zygote case in normal circumstances, the zygote and the pre-embryo take part in the same life-event and there is one human organism that continues to exist in virtue of such a transformative process—and each of us is such a changing organism. A similar reasoning can be applied to all of the subsequent phases of early human development.

[43] My claim is not to be understood as a general principle to be applied to all organisms or cell divisions. I think that it is very hard to state plausible general principles to be universally applied.

An alternative application of the identity conditions of the OVA to the same case can proceed as follows. One organism or substance (a fertilised egg) and another organism or substance (the pre-embryo) are relevantly causally connected. For my purposes, we can also regard the pre-embryo as a lump of biological matter. As a result of the connection (and of its *relata*, environmental conditions, etc.) between the zygote and the pre-embryo, there is a human organism that is first constituted by a fertilised egg and then by the pre-embryo (or by a lump of biological matter composed of pre-embryonic cells). We were each such an organism. A similar reasoning applies to all the other phases of human development (which are less controversial with respect to the existence of a continuing human organism).

Some may argue that one problem for the line of reasoning explored above is that it may follow that not all of us (if we are organisms) came into existence after a relevantly very similar period of time. Granted, in cases in which twinning takes place, each single individual may not come into existence when the egg from which both individuals originated comes into existence; however, this does not seem to be a significant theoretical problem. The zygote-foetus argument may violate the principle according to which two entities of the same kind (e.g., I (a single child) and a human being who resulted from twinning) must or should originate at relevantly very similar points in gestation. However, I do not think that such a violation is especially troublesome. In short, I accept the possibility that not all organisms of the same species must always have the same developmental timeline. Another reply to this worry can invoke a Lewis-style approach to fission, the main idea of which is that in cases in which division takes place, twins have always existed since their common egg-stage. According to this view, a case of twinning is not an event in which two different individuals come into existence; rather, it is an event in which two individuals (that started at the same time) stop sharing the same temporal stages.[44] In addition, it seems biologically possible that human organisms (or at least embryos) can be now created in a variety of different ways the starting points of which may differ.[45]

It seems that the strongest reason that can be given in favour of the idea that we come into existence around the sixteenth day after fertilisation is that only at that stage the relevant individual has reached a level of internal organisation required for the ontological identification of a biological organism. More specifically, after 14 or 15 days, the cells that compose the pre-embryo are differentiated in the sense that some will become part of the foetus and others part of the placenta. The precursor of the spinal cord starts to be formed, and the possibility of twinning seems to be excluded. However, much of the previous reasoning is based on a loose definition of what should count as an individual biological organism—for example, what degree of organisation of its parts is needed for a human organism to come into existence? If we set the bar relatively low, there is a certain degree of organised

[44] See Lewis (1976/83).

[45] See Findlay et al. (2007) for a survey of the astonishing variety of ways in which embryos can be created.

activity even among blastomeres—a level of interaction that is different (and higher) from the level of interaction between them and, e.g., another egg in the host's ovaries.[46] Moreover, as we have seen, there are conceptions of what an organism is (e.g., a spatiotemporally connected causal and functional unity) which seem to be broad enough to bestow biological individuality (and continuity) also to the non-twinning entity or to the collection of individuals that allegedly exist from fertilisation to the sixteenth day. Starting from these considerations, we may argue that (1) in the absence of a stricter conception of what an organism is, or (2) in the absence of a stricter specification of the required level of complexity that a collection of cells should have to be considered an organism or a human organism, and (3) given certain plausible conceptions of what we are and of the identity conditions of human organisms (e.g., OVA's understanding of an organism as a collection of parts having a life), (4) we have reasons to believe that, in the case of organisms like us, at least one life-event per individual persists from the generation of an egg to the death of the relevant developed human organism. Thus, (5) we have reasons to believe that, if each of us is a persisting human organism, then our life started when the relevant egg was generated.

5 Conclusions

Let us return to Marquis' reply to the contraception argument. His point was that contraception or abstinence are not immoral because they do not deprive any entity of a future like ours—the main reason being that, at that stage, no relevant entity exists. However, if the previous arguments about our beginning are correct, according to OVA, an unfertilised egg is the same substance as one of us, is part of a human organism that comes into existence when the egg comes into existence or, at least, is a substance that constitutes at a specific time an organism that is one of us. If this is true, then, after all, there is an entity that has a future like ours, namely, the human organism that comes into existence when an egg comes into existence, whose future of value can be or is taken away by contraception or abstinence. However, all things being equal, contraception or abstinence are not morally wrong; thus, depriving an entity of a future like ours is not, even in cases involving some innocent individuals, always wrong. The future-like-ours argument is, at best, incomplete.

How can the future-like-ours argument be improved to reply to the previous objections? The best strategy would be to provide a version of animalism that includes a different specification of the conditions of identity of human organisms or life-events, in particular, of those life-events correlated with human organisms. However, such a specification may become another poisoned chalice for the supporter of the future-like-ours argument. For instance, some philosophers of biology (e.g., John Dupré) have argued that a substance-ontology is inadequate as an ontological basis for "our understanding of the living world" and that there is continuity

[46] Koch-Hershenov (2006) is relevant here.

among some relevant life-processes.[47] The adoption of a different ontological approach may not in itself help Marquis, unless such an ontology also implies that the subject of harm (one of us) does not come into existence at a relative early stage of human development. However, it is not clear to me how this can be achieved, and I do not seem to find good suggestions to offer to the animalist (or to the supporter of Marquis' argument).

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[47] See Dupré and Nicholson (2018) for a very recent statement of a processual approach to biology.

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