

Are Brains Needed for Fetal Subjectivity?

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ABSTRACT: This paper argues that we have reason to broaden our ideas about the arrival of subjectivity in fetal development. It is often assumed that fetal subjectivity arises at a certain point in time on account of the development of the brain and that before there is sufficient development of the brain there is no reason to posit subjectivity in the developing child. There are, however, reasons for situating fetal subjectivity differently, given that our regular recourse to the language of irreducible substance needs to assume a richer and more mysterious philosophy of nature. There is simply no metaphysical reason for limiting minds to brains, given the failure of the mechanical model to explain mental activity, especially when mental semantics are already employed to describe the behavior of embryonic and fetal striving.

IN THIS ESSAY I WANT TO OFFER some thoughts on how to approach the teleological development of the unborn child and suggest why we might incorporate certain mental qualities into our account of this process earlier than we may be used to doing. I am motivated by the desire to see human life from the moment of conception in a way that takes full notice of the rich, dynamic, and quite *mysterious* thing that is the pre-born human child. I think that we have reason to see subjectivity as an immanent feature of a human being from conception onward and that we need not resort to the usual distinction between “potential mentality” and the “arrival of cortical brain activity.” Even to begin to consider the Aristotelian model of “substance” and “potency” we need to let go of the usual mechanical model, and doing so gives us an opportunity to re-think the various forms of mental agency that can be detected in a developing child. Accepting a broadly Aristotelian philosophy of

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nature easily allows us to reject as immoral the sort of practices involved in embryonic stem cell research. At the same time it can open us up to additional possibilities in the philosophy of mind, possibilities that might have an impact on our understanding of human representation prior to the later developments in the brain.

My suggestion that subjectivity might be found even in the conceived child's earliest goings-on is based on the simple fact that embryonic striving provides us with a clear case of irreducible teleology. Such striving is a "hard problem" that shows the incoherence of the mechanistic consensus. Like the more celebrated "hard problem" of consciousness, it shows us that principles of weak emergence simply fail to explain even the most ubiquitous features of nature. The claim to find subjectivity at the earliest stages of human development is also based on the observation that an exhaustive description of teleological activity seems to need to incorporate mental language, for any description of that same activity without mental language will be less clear and less accurate as a result. There is simply no mechanical recipe that can show us how mentality is reducible to the operations of the brain, and so we have good metaphysical and practical reasons for calling upon subjectivity in places where it is helpful to give an explanation, even if that means positing it where a developed brain is not found.

This is a decidedly untechnical paper. My goal is not to offer a sustained proof of non-cortical mental happenings in embryonic and fetal development, nor even to argue for the broadly Aristotelian metaphysics of an irreducible substance with an immanent aim and end. I will instead assume this particular philosophy of nature as correct and then suggest that it accommodates observations about the activities of an embryonic mind. At the very least, such a conception of mindful subjectivity in an embryo presents itself as reasonable once we sufficiently absorb the mysterious (and mystifying), mindful, exuberant, and rich philosophy of nature that grounds our talk of a human substance.¹

¹ I should add – much like I did when I presented these ideas at the conference – that the crime of abortion does not grow less by one iota if everything that I am suggesting about mind-without-brain here were proven wrong (something that might be known only to God). I do not feel the need to die on this hill. If, by God's grace, I am granted the beatific vision and if it is explained to me by the angels that the moment of the arrival of consciousness in human beings actually happens as a consequence of a certain degree of development of the brain (around 24 weeks), that is all well and

The Subjectivity Threshold Argument

Let's start by considering the fact that one of the more popular arguments for the permissibility of abortion has to do with how and when subjectivity arises. Of the various pro-abortion arguments that can be constructed – I will call it the subjectivity threshold argument – is probably the most forgiving. This argument, in its most basic form, states that entrance into the moral community is enjoyed by those human beings who have achieved at some point a basic level of subjective experience of the world.² When I talk of subjective experience of the world as “to be conscious” (to put it crudely in this way is ironically to put it technically), I mean that the world *shows up for you*, in some way – in any way at all. As Thomas Nagel reminded us long ago, wide is the gate of subjectivity. Presumably the world “shows up” for bats and dolphins but in dissimilar ways, and yet we do not discount their respective subjectivities merely because both they diverge from that of an adult human being. The subjectivity threshold argument does not depend upon the arrival of *complex* sorts of subjectivity³ nor of dispositional desires but only of “raw” subjectivity – subjectivity *per se*. If subjectivity is present in any such way, the world “shows up” for an entity, and we can say that it has subjectivity. Therefore, according to the subjectivity threshold argument, this is to be past the threshold necessary for establishing that the being is capable of experiencing moral harm. If we are not past the subjectivity threshold, the being is not in the moral community.

Proponents of the subjectivity threshold argument – forgiving as they are (and rare as they are) – are happy to admit that some sort of “raw” fetal subjectivity might be present even if it diverges in key ways from adult human

good. But I nevertheless want to suggest that I will not be given that sort of answer precisely because, as I want to argue, mind does not work that way. We need to think about things differently.

² I say “at some point” to offset an objection, or at least to narrow my focus to beginning-of-life issues. Certainly there are many today who will argue that once our brain activity has been damaged so much as to undo its (supposedly) emergent conscious states (e.g., if one is in a coma), we will thereby forfeit our place in the moral community. I am here articulating a generous version of subjectivity threshold argument that would still grant coma patients equal access in the moral community.

³ I say this although I am uncomfortable even with the imagery of “raw feels” precisely because I do not think subjectivity need be so richly qualitative – even if it need be (as I will mention later on) in some way *intentional-object* dependent.

subjectivity. But, they go on to insist, subjectivity is subjectivity: the chasm between a world showing up for you and its non-conscious opposite *is categorical*. What matters for proponents of the subjectivity threshold argument is the presence of subjectivity *per se*. If a fetus has it – *when* a fetus has it, and *however* a fetus has it – then it is part of the moral community. As such, it may not be aborted.⁴

The subjectivity threshold argument thus says something that most of us readily assume: to wit, that in the case of human beings, to have some sort of a baseline of subjectivity is to have at least as a necessary condition a minimal amount organized brain activity. We assume that subjectivity is parasitic on at least a partly developed brain. To assume as much is not to tie one to any one particular philosophy of mind: it is merely to assume that a brain (however minimally developed) provides a necessary (though perhaps not sufficient) condition for having a world show up for someone.

So, the proponents of the subjectivity threshold argument argue, before the arrival of the minimal level of organized brain activity in the course of human development, there is not yet any subjectivity present. As such, the individual has not yet met the minimal threshold. If that is the case, we are free to abort such non-conscious entities. After all, say the proponents of the subjectivity threshold argument, morality is presumably about harm, and it is difficult to see how an entity that is not, and never has been, a subject of experience could be said to be morally harmed. If the world has yet to show up for you, it is difficult to see how you can be morally harmed. Indeed, we can certainly harm non-conscious objects like iPhones, or topsoil, or water, or even our own liver. But while these harms are real, they are not *per se* moral harms. To *morally* harm an agent, one must (details aside) be dealing with an agent that has – or has had at some point – subjectivity. So, according to the subjectivity threshold argument, abortion before the arrival of the development of organized brain activity is licit.

⁴ Again, notice that I am establishing a very forgiving threshold here. Most pro-abortion advocates would hesitate to cede this much ground. On the subjectivity threshold argument that I am proposing here, a conscious entity does not need to have a further desire to “continue to exist” or “to not be harmed” in order to enter the moral community.

Options after Rejecting the Subjectivity Threshold Argument

Of course, the subjectivity threshold argument is grotesque. Even though it cedes as much ground to the opponents of abortion as it can, it is still dangerous and wrong, for it allows as morally licit the killing of living human beings before the arrival of brain activity. This argument allows, for example, the appalling practice of embryonic stem cell research, and even of “early” abortions up until the development of the neocortex. Thus, the anti-abortion advocate has rightly opposed even this seemingly “narrow and limited” sort of advocacy for abortion. This sort of evaluation for various versions of the subjectivity threshold argument (however forgivingly it may be construed)⁵ has been well articulated by many.⁶ A position that shows us the moral wrong of abortion from the moment of conception on seems to require an argument that hinges on the acceptance of something like an Aristotelian conception of substantial form and one that takes account of the actual existence of potentiality.

The following is my reconstruction of a response by the *substance* view to the subjectivity threshold argument. By including in the category of moral harm only actual subjects of experience (instead of potential subjects of experience), we can thereby conveniently ignore that we are beings through time, with substantially (that is, as a consequence of our essence) relevant teleological goals and features. A human being, from the moment of conception, is a new and autonomous substance, with its own, immanent drives and purposes. It has a real telos, and therefore real potencies. As such, this entity is a dynamic being that is still undergoing development. To deny personhood-status to pre-conscious developing embryos (fetuses, babies) is *eo*

⁵ Cf. David Boonin, *A Defense of Abortion* (New York NY: Cambridge Univ. Press, 2002), wherein (especially in ch. 3) he relies heavily on the notion of “organized cortical brain activity” to identify the beginning of conscious states and in turn the grounds for moral protection.

⁶ Cf. Francis Beckwith, *Defending Life* (New York NY: Cambridge Univ. Press, 2007) and Patrick Lee, *Abortion and Unborn Human Life* (Washington D.C.: The Catholic Univ. of America Press, 2010), in addition to Robert George and Christopher Tollefsen, *Embryo: A Defense of Human Life* (Princeton NJ: Witherspoon Institute, 2011). My own look at things is heavily influenced by Peter Simpson’s unique reminder that the unborn child is a human being *in statu fiendi*. See his sustained argument against abortion offered in *Political Illiberalism* (New York NY: Routledge, 2015), pp. 208ff.

ipso to deny the real unfolding-through-time of human substances, and indeed to deny the very existential reality of potency. The subjectivity threshold argument oddly sees the unborn child, at whatever moment in its development, as just that – at a moment. That is to say, it sees the child as an itemized and abstracted polaroid, disconnected from its own subsistent developing, its becoming, and its real teleological unfolding. The subjectivity threshold argument denies that our potencies are real when they have yet to be sufficiently actuated. To say that the actualization of subjectivity-from-brain-stuff is a necessary criterion for entry into the moral community is not just to misconstrue the human being metaphysically but ultimately to deny what science tells us. After all, it is because we are a developing, autonomous, and irreducible substance from the moment of conception that we can materially develop after our conception in the way that we do – that is, as the (1) particular (2) human being that we are. In short, it morally matters that we are the sort of irreducible substances that we are. It does not morally matter that we have not yet instantiated various features exhibited by that substance at any snapshot in time, during its development.

At the heart of the response to the subjectivity threshold argument that I have proposed on the basis of an Aristotelian *substance* theory is a critique of its readiness to abstract from the temporality of a lived life. This approach makes it difficult to understand the constant unfolding that is characteristic of human life: our becoming-through-time. To evaluate this proposal we need to see clearly just how odd the assumptions of the subjectivity threshold argument truly are and to see what we might suggest vis-à-vis the personhood status of the embryo once we thoroughly reject the mechanical model on which it is based. It is dangerous and wrong to think that entry into the moral community hinges on having subjectivity.

But to adopt a metaphysical position that speaks of the existence of latent powers and of a dynamic unfolding through time of the potentialities of an irreducible substantial form is to put pressure on the original premise that made the subjectivity threshold argument plausible. This is the assumption that our conscious connection to the world is initially and entirely a function of brain activity – that subjectivity is entirely parasitic on brain-activity.

I reject the argument that our subjectivity arises from brain activity alone precisely because the Aristotelian metaphysics at my disposal as an alternative to mechanism gives me grounds for doing so. I think that we can speak of a sort of subjectivity from conception onward. I want to argue that subjectivity

is not necessarily parasitic on organized brain activity and that instead it is an irreducible feature of the teleological striving of an embryo from conception onward. The Aristotelian concept of substantial form gives us entry into a world of natural agency other than mechanical motion. By doing so there is an alternative to those conceptions of mind that would limit it to particular mechanical motions of neural complexes. A metaphysical position that accepts really existing potencies and the reality of dynamic teleology can reject merely mechanical understandings of embryonic development. It also gives us good reasons to locate subjective experience in a myriad of natural, unified subjects of teleological striving, including embryos. I want to suggest that the embryo's own striving and its relationship with its mother as well as the mother's relationship with the form of life that is growing within her even early on is of a reciprocally experiential sort. A developing embryo is experientially responding to the world outside of itself, and we would be remiss to imagine or translate the experiential language that we use to describe embryonic development in any way that obscures this point.

Obviously, I am not saying that an Aristotelian conception of an irreducible substance, with formal and final causes, in any way requires that we locate subjectivity in embryonic teleological striving.⁷ In fact, the rich Aristotelian notion of efficient causal power can make sense of the "strong emergence" of subjectivity from "cortical activity" in ways that a merely mechanical construal of that same cortical activity simply cannot do, as talk of the "hard problem" (elaborated below) makes clear. Yet, at the same time, there is nothing about this metaphysical system that entails that cortical activity shows that there has been some change in the substantial form that is operative from a vegetative soul to a sensate soul.

Embryonic Striving and Mind

To observe embryonic development is to see in visceral detail just how enchanted an Aristotelian philosophy of nature truly is. At any rate, to try to invoke the mechanical language of pushing, pulling, bumping, thumping, and

⁷ We should keep in mind that there are scholars who argue that we might misconstrue Aristotle's intent if we downplay or deny the extent to which Aristotle was happy to locate mind in the world, in ways that look almost panpsychist (by modern articulations of that idea). Consider, for example, John Rist's examination of *pneuma* in his *The Mind of Aristotle* (Toronto ON: Univ. of Toronto Press, 1989).

stacking in order to make sense of the striving involved in the development of the embryo is simply to fail to offer an inference to the best explanation of such phenomena. We see here is the mystery of teleological development in action.

Now, of course, to invoke the term “teleology” is to bring along as well many other features that saturate the natural world. As David Oderberg writes, “the very concept of an essence or nature, whether that of a living or a non-living thing, carries with it the idea of a characteristic tendency towards a certain kind of operation or behavior, and resistance to other kinds of behavior or causes contrary to the thing’s nature.”⁸ But with living systems there is a special kind of behavior – what Oderberg helpfully calls “immanent causation” – that is, self-directed activity for the maintenance of the very thing that is doing the causing. Indeed, this is precisely what we *see* with embryonic development. *An* embryo is itself a lively, irreducible substance that itself strives toward its own goals. It self-organizes as a macro-level thing. It self-repairs. It is self-directed. It is engaged with the world outside of itself. It makes its presence known. This is how we rightly describe what we see. It is macro-level control center for its various parts and processes, but not a part of something else. Resorting to the language of mechanism to describe an embryo’s development (and thus no longer to speak of irreducibility but merely of variously described “complexes” of parts being assembled through blind and brute pushes from behind) would be an arbitrary abstraction, a quasi-Orwellian historicist description of natural events.

Indeed, we are justified in considering embryonic development by way of a more robust philosophy of nature – one that assumes irreducible substances unfolding through time – because what we see through the microscope is also what we see with our naked eye when observing the natural world. Or, at least this is what children rightly see, in addition to those fortunate souls who live outside of urban, industrial technocracies beholden to the mechanistic consensus. Such people have to be told in their school books by naturalists and technocrats that nature is actually structured otherwise. Indeed, getting people to accept abortion is a harder sell if we do not first tell children that their entirely correct but more enchanted idea of nature (and therefore their baby sister’s amazing development within their mother) is an “unscientific analysis

⁸ David Oderberg, “Teleology: Organic and Inorganic” in *Contemporary Perspectives on Natural Law: Natural Law as a Limiting Concept*, ed. Ana Marta Gonzalez (New York NY: Routledge, 2008), p. 260.

of that development,” despite what they are witnessing. James Barham puts the point well: “According to the mechanistic consensus, the things that happen in organisms do not really happen for a purpose; it only looks that way.”⁹ But the explanations by scientists and technocrats as to why mind and nature and in turn embryo development are otherwise from what we see leave us cold. To say the least, it is very difficult to make sense of the movements of living things – from flagella to dolphins to bugs to grass to a farmer’s soil, let alone embryos who develop and change and self-organize and even self-repair – through blind shoves from behind.

Indeed, it is difficult to make sense of what we see even for the very philosophers who swear allegiance to the mechanistic consensus. This is why philosophers speak about the “hard problem” of consciousness. Even those committed to seeing the world by way of the bumping, thumping, pushing, pulling, whirling, swirling, and stacking of various brute, inert, and infinitely reducible bits in nature cannot seem to fit consciousness – one of nature’s more ubiquitous features – into its model.

There is an important thing to notice about the “hard problem.” It is cosmological. It shows us that there is an ontological chasm between a non-conscious thing and a thing that has even the smallest amount of consciousness. One cannot tweak mechanical bits just right, or build them into a whole just right, and “get” consciousness. Consciousness does not “weakly” emerge in the same way that (as William A. Wallace nicely put it) a circle will not weakly “emerge” from a polygon, however many more sides are added. The hard problem shows us that the arrival of subjectivity really is a *pow* moment, for an entirely new feature has *ex nihilo* come on the scene in ways that eschew a mechanical analysis.

Some mechanists miss the forest from the trees when it comes to this important cosmological point. Consider these famous words from Patricia Churchland: “The weight of evidence now implies that it is the brain, rather the some non-physical stuff, that feels, thinks, and decides.”¹⁰ We should find it

⁹ James Barham, “The Emergence of Biological Value” in *Debating Design: From Darwin to DNA*, ed. William Dembski and Michael Ruse (Cambridge UK: Cambridge Univ. Press, 2004), p. 210

¹⁰ Patricia Smith Churchland, *Brain-Wise: Studies in Neurophilosophy* (Cambridge MA: The MIT Press, 2002), p. 1.

remarkable how irrelevant this point is from a cosmological standpoint. It would be no less cosmologically mysterious, from the standpoint of mechanism, if it were a brain or a toaster or Ted the stuffed bear that thinks and feels. It is precisely because the problem is cosmological that we naturally do not see anything about brains that would have a special mechanical ability to bring about mentality.

Now, it is important to mention that those who accept a rich Aristotelian philosophy of nature, one that speaks of irreducible substances and teleological striving, do not somehow fix this metaphysical conundrum. It is not as if the cosmologically new features of subjectivity are not just as mysterious for the Aristotelian as they are for the modern naturalist mechanist. Rather, the Aristotelian rightly argues that nature shows us that the hard problem is in fact everywhere. For the Aristotelian, the hard problem is actually a complex of cosmological problems – problems saturating every level of existence, including physics, chemistry, and biology.

To see what I mean, consider flight. Let's assume (many details aside) that flight is, to the celebration of naturalists everywhere, merely a weakly emergent phenomenon. After all, an airplane's macro-level flying powers seem to be mechanically explained by the arrangement of the interconnected, fast-moving metal parts of the plane. Presumably bird flight might be in many ways similar to the flight of a 747. But that the myriad parts of a bird's brain give rise to a unified subject of sensations and desires for the bird is simply something that is not analogously explained by a weak emergence story about the parts of a bird's brain.

Not only are birds quite aware of their bird *dasein*, but birds are also living, irreducible entities – macro-level wholes, on the level of the bird. They are entities that grow, develop, self-repair, and strive to flourish. Rupert Sheldrake puts the point well: “No machine starts from small beginnings, grows, forms new structures within itself and then reproduces itself.”¹¹ The bird is made up of nested macro-level wholes, with each whole seeking its own maintenance and the maintenance of surrounding wholes and ultimately that of the whole bird. In other words, a single bird is, as a substance with a substantial form.

My point is that there is a “hard problem” that is present from the moment

¹¹ Rupert Sheldrake, *Science Set Free* (New York NY: Deepak Chopra Books, 2013), p. 44.

that a living thing presents itself. Irreducible substance is a hard problem. Teleological development is an extraordinarily hard problem. That a thing develops on the level of thing, that it strives toward the future as that thing, that it self-repairs and asserts itself in the world, that it engages meaningfully and purposefully with the world – these are all hard problems for the mechanistic consensus. To their credit, some have noticed this complex of problems, as titles like Owen Flanagan’s *The Really Hard Problem: Meaning in a Material World*¹² might suggest, for books of this sort take stock of the extraordinary challenges that natural purpose and natural normativity raise for the mechanist, if such real purpose is out there, outside of our heads.

Indeed, much to the chagrin of mechanists everywhere, our descriptions of nature are chalk full of teleological language. Indeed, it is for this reason quite common to hear talk of Popper’s “promissory note physicalism” – the idea that we will at some point “cash out” the normative metaphors that we use at present for the sake of convenience. James Barham puts the point well: “Although biologists may say that it is only a matter of convenience, the fact is that biological treatises and textbooks are saturated with teleological, normative, and even intentional terminology of every sort, and it would in fact be impossible to discuss the phenomena of life at all without recourse to such descriptors.”¹³ The very fact that physicalists have to hope for a future time when normative language can be avoided in biological description shows how uncomfortable they are with the idea that such language merely serves as a metaphor for something more basically mechanical. They worry, rightly, that if this language cannot be cashed out, it is because it is not really metaphorical after all.

So far so good. But more relevantly, we should notice that ditching a model of nature that would show us that subjectivity is a special problem still leaves needing to recognize that teleological striving is a feature of the world that also has trouble eschewing the language of mentality. Here is James Barham again: “Talk of regulation, control, signals, receptors, messengers, codes, transcription, translation, editing, proofreading, and many other, similar terms.... These concepts are no less normative than those of everyday

¹² Owen Flanagan, *The Really Hard Problem: Meaning in a Material World* (Cambridge MA: The MIT Press, 2009).

¹³ James Barham, “The Reality of Purpose and the Reform of Naturalism,” *Philosophia Naturalis* 44 (2007): 36.

speech.”¹⁴ But this language is not just normative. Messaging, transcribing, translating, constructing internal representations: these are things that subjects of experience do, and moreover, things that non-conscious substances do only if we are speaking figuratively. These are behaviors that require a world showing up for you in some way, in order to be undertaken, lest the description of these behaviors be seen as literal as opposed to being merely metaphorical. To this list we should add: desiring and striving. Embryos have aims and ends that they strive to instantiate through the course of their developing. They have a desire for their future subsistence. We thus have to ask: can these behaviors be translated into language that does not invoke mental goings on? If we made that translation, would we still be accurately describing what we see?

As an aside, it should be noted that the sort of striving and reaching that we see in fetal development does not differ in kind once (in the course of its development) various elements of the brain come together. The behavior of the developing fetus does not magically differ once the brain arrives. We see, before and after the arrival of the brain, various teleologically-beholden strivings. The fetus was not causally inert before this point, and it does not suddenly look at its hands and body in exuberant amazement, and then show that it is highly aware of what it is doing. If we are going to continue to go by what we see, we should suggest that the arrival of cortical activity brought no special sort of *pow* moment. Sometimes it is asserted that the fetus, after the arrival of various brain elements, starts to stare intently at things longer than before (around week 24 or so). But while this might show that the brain provides various way in which to concentrate, it certainly gives no evidence that at this point (and not before) a fetus has (some sort of) conscious connection to the world outside of it.

Of course, one might respond that descriptions of embryonic development, prior to the arrival of the brain, can seemingly avoid the expressly mental language of desiring and striving by instead using the specifically computational language of “coding” and “programming” to describe its behavior and development. But we have reasons for simply rejecting the accuracy of such code language. For one thing, precisely because the language of coding is specifically computational, we can therefore reject its descriptive accuracy of embryonic behavior from the beginning. If the “code and program” language is to accurately describe the unfolding of the embryo, then the physical embryo

¹⁴ Barham (2004), p. 212

in utero – the real, physical being – cannot itself be the *program*. It has to be either an artificial mind or a real mind. But fake minds – computers, for instance – are artifacts. They are precisely a “cluster of parts” and reducible to those parts. Computers do not self-repair. They do not grow or develop. They do not, as John Searle showed us, engage with the world around them.

In order to make intelligible such program language, we have to rely on an external mind: namely, God. But why would God, the creator of the supposed program, need such a program in order to properly develop the embryo? And more importantly, why resort to talk of the mind of God in order to describe how a non-conscious entity could ever be beholden to intentional objects outside of itself, when we can just as well assert, with equal mystery but yet equal clarity and plausibility, that the substance has itself, in some such way, representational access to these intentional objects? After all, we have previously shown that there is nothing about the brain that should lead us to believe that these mysteries can be avoided or explained. The question, as I see it, is simply how and where we are going to defer the mystery. At any rate, let’s at least agree that the embryo cannot itself be a mere artificial mind.

The Arrival of Mind

It has been previously established that the dynamic process of an embryo’s development is best described through language that is irreducibly mental. And previous to that we suggested that a mechanical story of nature simply cannot account for the emergence of either unified conscious subjectivity or irreducible unity *per se*. My claim now is that an embryo is a subject of experience because it is an irreducible, teleological, bound subject of a particular sort – one that is the highest level of a series of nested wholes – after all, the baby is not the mother and is an organism that engages with its outward environment. Subjectivity requires subjects: irreducible, unified agents. Moreover, it requires engagement with the world around it. Experience is an interactive manifestation between an irreducible subject and its environment. That we are a subject of experience *per se* is a manifestation of our form and agency, not a particular, accidental feature of this formal agent, namely, the brain. To invoke the popular television show *Futurama*, Richard Nixon’s head may be a character in the sitcom, but human beings are not merely their heads.

This is not to deny the irreducible powers of the brain for regulating thought or bringing our subjectivity to a particular level and type. But it might be premature to conclude that any and all subjectivity is solely a consequence

of the arrival of the elements and that make up a brain.

So, what does all of this have to say about the precise nature of the embryo's subjectivity, or the subjectivity of a fetus prior to the arrival of its "organized" brain activity? What, we might ask, "is it like" to be an embryo? To this, we might simply say that it is hard to say. That might be an unfortunately anti-climactic conclusion to this paper. But I hope that it helps take the edge off what might otherwise sound like a needlessly provocative thesis. As mentioned, I think that while we are not forced to arrive at this somewhat peculiar conclusion about embryo-mind, it is a conclusion that should be given room on the table, not only because our more enchanted, Aristotelian metaphysical paradigm allows us to do so but also because we seem to describe the development of the fetus through mental language anyway. Our language gives us away. Moreover, I think that this sort of early post-conception, autonomous subjectivity, however distant from the realized potency of rational agency later on in a human child's development, might help to explain the incredible pull and seemingly reciprocal affection enjoyed by the new pregnant mother.

At the very least, we can assume, by emphasizing the dynamic striving of nature, a great diversity and range of conscious experience. While there is, as mentioned above, an ontological chasm between the non-conscious and the conscious, the landscape on this side of the divide is vast. Mentality comes in degrees and kinds precisely because the ways that myriad types of substantial form engage with reality are vast. Nagel's bat is a feeble old thing, but it is still screeching at us from the cave. We should not deny other sorts of experience by projecting our own sort and intensity of subjectivity onto other natural things and then conclude an absurdity, especially given that mothers themselves can easily avoid this sort of needless projection when it comes to the child growing within them.

No doubt, we do not *see* the "usual" marks of subjectivity in an early-formed human being (though as mentioned, mothers might feel it in a certain way, and anyway one might wonder just what precisely the "usual" marks are). But as neuroscientists have shown, our recognition of other minds comes from encultured reactions to various facial features that cause us to reject or downgrade the subjective lives of even full-grown humans who have nerve or neurological damage resulting in frozen facial features (like Parkinson's patients). We should therefore pay more attention to the marks of immanent teleological agency and notice more fundamentally that even our own

descriptions of natural processes require mental semantics. We should also notice, as the panpsychist Freya Mathews has noted, how our industrialized enculturation hinders us from seeing the true powers of the natural world and the ways that substances in nature truly speak to us.¹⁵ Part of this debate should involve properly re-orienting ourselves to nature.

¹⁵ See her illuminating work, *Reinhabiting Reality: Towards a Recovery of Culture* (Albany NY: State Univ. of New York Press, 2005).