



# Thinking Animals or Thinking Brains?

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## Abstract

Animalism offers a more attractive account of the human person than the Embodied Mind Account. If people are not animals, but small proper parts of animals, then there is a threat of spatially coincident thinkers. This will likely have to be avoided at the cost of the sparsest of ontologies, one in which there are no larger entities that can become reduced to the size of the brain or cerebrum-size thinker. This will be a rather implausible ontology as such thinkers will not fit well into the natural world, meet traditional independence or unity criteria for being substances, nor provide a compositional principle with causal glue.

## 1 Introduction

Few philosophers doubt that we are persons. What is in contention is whether or not we human persons are identical to human animals. Their identity has been vigorously defended by van Inwagen (1990), Olson (1997), and other advocates of Animalism. Most Animalists assert that it is not our mental capacities but our biological processes constitutive of life that are essential to us. Their rivals argue for distinguishing human persons and human animals. They typically insist that essential to us are some sort of psychological features, not biological ones. Materialist versions of this psychological approach to our identity have traditionally considered the person and the animal to be composed of the same atoms and thus spatially coincident, i.e., in the same place at the same time (Shoemaker 1963). Since the co-location of distinct persons and animals gives rise to a number of metaphysical puzzles, some philosophers such as McMahan (2002) and Parfit (2012) have more recently championed the view which identifies the

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human person with just a small thinking part of the thinking animal, perhaps the cerebrum. McMahan calls this the *Embodied Mind Account*.<sup>1</sup>

A favorite Animalist tactic has been to accuse their opponents of suffering from “The Problem of Too Many Thinkers” (Olson 1997, 2002, 2003, 2007). The basis for this charge is that if human persons are distinct from but spatially coincident with human animals, then if persons can use their brains to think, so can their animals. Consequently, there will be two thinkers where we expect and want just one. The Embodied Mind Account theorists respond that while the Animalist charge of too many thinkers may be effective against psychological approaches to personal identity that posit persons and animals to be the same size as does Constitution theory (Shoemaker), there is not a Too Many Thinkers Problem if the person is a small thinking part of the animal. When persons are construed roughly as brain-size proper parts of animals, there is no more of a problem of two genuine thought producers than there is a problem of two noisemakers when a car has a honking horn. The car is not strictly a noisemaker, despite its horn blaring. At most, the car is derivatively noisy in virtue of the horn being non-derivatively noisy. Likewise, the animal is thinking derivatively in virtue of having a part that non-derivatively produces thought.

My aim is to persuade readers that it is their animal and not a brain-size or cerebrum-size part that is strictly thinking their thoughts. I suspect that advocates of the view that persons are just small proper parts of animals are misled by the conceivability of scenarios in which we can still think despite much of our body amputated to wrongly conclude that it was all along only part of body that produces thought. Unbeknownst to the more prominent Embodied Mind Account theorists, the Too Many Thinkers Problem is not avoided by treating the person as a proper part of the animal.<sup>2</sup> There are objects larger and smaller than such little persons that can become spatially coincident with them and thus be as genuine a thought producer as they. So identifying persons with parts of animals merely moves the lump around in the metaphysical carpet. What the Embodied Mind Account theorist must ultimately do is deny that there are any entities that can be reduced in size to the small, roughly brain-size person as well as deny the existence of any smaller brain parts that the tiny thinker could be reduced to in size.<sup>3</sup> That will involve a commitment to a very counterintuitive sparse ontology that posits thinkers no bigger than the brain as the only composites.

Animalists themselves are infamous for avoiding the too many thinkers by positing their own sparse ontology that paraphrases away commonsense parts of anatomy that would otherwise be additional thinkers as “atoms arranged brain-wise” and “atoms arranged cerebrum-wise” (Olson 2007). So, they may not appear to be in any shape to throw stones. I will argue that this is not the case—Animalists have a warrant to throw “atoms arranged stone-wise” that Embodied Mind Account theorists lack. The sparse Animalist ontology has persons *and* animals, the sparse Embodied Mind Account

<sup>1</sup> Parfit labels it the *Embodied Part View* and favors a Lockean variant he names the *Embodied Person View*. Similar defenses of persons as proper parts of animals are found in Dowland (2016) and Reid (2016). Persson argues that the Embodied Mind Account avoids the too many thinkers problem but is reluctant to endorse it as the correct account of personal identity (1999, 521). Hudson (2001) offers a four-dimensional version of the Embodied Mind Account.

<sup>2</sup> Dowland (2016) is the rare defender of the Embodied Mind Account to recognize this problem.

<sup>3</sup> Dowland endorses such elimination while McMahan and Campbell earlier briefly consider and reject a version of such eliminativism (2010, 289).

ontology has only persons. The animalist picture fits much better into our conception of the natural world of mindless organisms developing minds. Moreover, inasmuch as we thinkers are substances, the animal is a much better candidate for meeting the traditional philosophical criteria of substances than brains or their parts. The animal has an independence, unity, and bona fide boundary that the roughly brain-size person of the Embodied Mind Account lacks. Animalism also answers the Special Composition Question (Van Inwagen 1990) concerning “The Xs compose a Y if and only if ...” far better than does the Embodied Mind Account. The Animalist provides a *causal glue*—the Xs are caught up in the *same life processes*—while the Embodied Mind Account appeals to the role of the brain’s parts in thought production but cannot account for why those parts end up where they are, how they remain there, and the manner in which they are replaced.

## 2 The Embodied Mind Account Response to the Problem of Spatially Coincident Thinkers

If the human person and human animal are numerically distinct but physically indiscernible, then if one is capable of thought, so should be the other. It is hard to comprehend why the animal would not have interests and thoughts if it shared every constituent atom with the person. Given the unwelcome extra thinker due to the spatial coincidence of the animal and person, McMahan (2002) and Parfit (2012) embrace the position that we persons are roughly brain-size parts of animals. More precisely, we are composed of the parts of our brains that are *directly involved* in the production of thought.<sup>4</sup> But it is commonly assumed that our brains exist before the onset of the capacity to produce thoughts and can exist after that is lost. The brains of human embryos are too immature to realize sentience. Some elderly brains are irreversibly comatose. The brains of the deceased can be preserved in jars of formaldehyde. Since McMahan holds that persons cannot survive the loss of those mental capacities, if a person’s brain can exist without producing thought, then persons are distinct from their brains. However, if persons are capable of thought solely through the activities of their brains, their brains should also be able to think. Why would the brain be sufficient to bestow thought upon the person but would not itself be a thinker? Thus, there arises again the threat of two spatially coincident thinkers—the brain and the brain-size person. Thus, the advocate of the Embodied Mind Account has not yet avoided the headache(s) of too many thinkers.

In a later work, McMahan and co-author Tim Campbell tackle this problem by denying that brains exist before the acquisition or after the loss of mental capacities. “There are no brains, only functional brains” (2010, 300). Campbell’s preference is to posit there are just the remains of a brain, while McMahan favors the view that the cessation of higher brain activity heralds the arrival of a new entity—the non-thinking brain (2010, 290). Campbell and McMahan treat the brain after the loss of thought akin

<sup>4</sup> Ingmar Persson writes of the Embodied Mind Account strategy “the practice of attributing psychological properties to animals is of a piece with an exceedingly common pattern. We observe that something exercises some power, e.g., that a liquid or a gas poisons or intoxicates us. Only much later do we discover that it does so in virtue of containing a certain chemical—that is, that the applicability of these predicates to it should be construed derivatively from the applicability of them to the chemical (1999, 523–524).

to the way Animalists who are “Terminators” treat the non-functioning body after the loss of life. The Terminators claim that animals go out of existence at death and do not persist as corpses, despite the macro-physical similarities (Van Inwagen 1990; Olson 1997, 2004). What is called the “corpse” is better interpreted as just remains that do not compose anything. Animals are essentially living beings. So perhaps Animalists cannot complain when Embodied Mind theorists assert that the cerebra are essentially thinking organs.<sup>5</sup> When the brain cannot produce thought, there no longer exists a cerebrum, just its remains.

While I am somewhat sympathetic to this move of Campbell and McMahan, they are not out of the mereological woods just yet. And it turns out that there is no ready-made path out of the woods. They are going to have to clear cut their way, cutting down the oldest redwoods and every other organism in the forest. To see why they must be so radical, assume with many prominent philosophers and neuroscientists that the human animal could survive being pared down to the size of the brain—the maimed animal would then be composed of every part of the brain and nothing else (Van Inwagen 1990; Olson 1997; Bernat 1998; Shewmon 1997; Damasio 1999).<sup>6</sup> The brain existed as an entity distinct from (non-identical to) the animal before the animal becomes the same size as the brain. If the brain was once not identical to the animal, it will always be distinct. The brain and the animal do not become the same entity when they come to be composed of the same parts. Since the brain and the pared down animal consist of the same parts, there would again be a problem of spatially coincident thinkers. Such animals will become spatially coincident with their brain and both will be non-derivative thinkers. The animal would not be a derivative thinker as the very same atoms arranged in such a way that enable the brain to non-derivatively think will also compose the maimed animal. My contention is that defenders of the Embodied Mind Account will have to deny that there are animals or any entities larger than the brain that can be reduced to the size of the brain. So, anything larger than the brain will be eliminated and paraphrased as “atoms arranged animal-wise,” or “head-wise,” or “upper-body-wise,” or “nervous system-wise,” and so on.

Supporters of the Embodied Mind Account might respond that the animal could not be reduced to the size of the person because it is the cerebrum and not the whole brain that is the thinking person. Animals cannot survive the reduction to the size of the cerebrum. A cerebrum’s activities are not constitutive of life. The cerebrum is an organ and not alive and so the animal cannot become spatially coincident with the cerebrum. While the brainstem is crucial to an animal because of its role in biological integration, the Embodied Mind Account theorist insists that it is not an essential part of the person. I think that this is more problematic because the brainstem is required for arousal and consciousness. The Embodied Mind Account response is that the brainstem is no more

<sup>5</sup> If the Animalist just claims animals cease to exist when they cease to function, then the Embodied Mind Account theorist is helping himself to the same strategy. But there are Animalists who claim the reason that the corpse is not identical to the living body is due to the different manner in which the living and dead acquire, retain, and replace parts (Hershenov 2009). There is no analogue in the Embodied Mind Account. The irreversibly comatose are still acquiring and retaining cerebrum atoms in the manner the functioning cerebrum did and so philosophical advocates of the Embodied Mind Account cannot appeal to mereological facts to resist identifying functioning and non-functioning cerebra.

<sup>6</sup> The brain stem still controls life processes and maintains sleep–wake cycles, brain reflexes, blinking, facial muscle tone, etc.

part of the cerebrum-size thinker than the wall outlet is part of the computer. The computer just runs on the power and the brain's reticular formation is required for arousal and consciousness, but neither is a part respectively of the computer or person.<sup>7</sup> I would counter that a better analogy is to conceive of the power source being a battery and that it as a part of the computer, even if it is a generic part. If the brainstem is like battery, it is still a part of the person. The reason the animal itself might become reduced to the size of the person is that (undetached) cerebrum actually needs a good part of the animal for thought to be produced. It certainly needs the brainstem. I will grant for now that the production of thought might not need all of the parts of the animal (hair, nails, toes, etc.). However, whatever parts of the animal are causally irrelevant to thought production, I suspect that their complement is large enough that the animal could survive a reduction in size to that thinking proper part. The animal would then be thinking non-derivatively if the spatially coincident person is thinking non-derivatively. And I do not see why the animal would later cease to genuinely think if the amputated parts were restored or duplicates attached. If the earlier maimed animal non-derivatively produced thought, later when the animal became larger, it is hard to accept the assumptions of the Embodied Mind Account and, as a result, view the animal as no longer really a genuine thinker. It is not plausible that the animal "grows out of thinking," ceasing to strictly think and have its own interests, coming only to think in some harmless derivative sense.<sup>8</sup>

Even if the last passage did not convince readers that the person must be larger than the cerebrum and the animal could become spatially coincident to a brain-size person, there will still be a problem of too many thinkers if some part of the animal's anatomy can be reduced in size to whatever parts compose the person.<sup>9</sup> For example, the human brain, or a large (perhaps yet unnamed) part of it, could be reduced to the size of the cerebrum. Moreover, since the cerebrum-size thinker can be reduced in size to either of its hemispheres, they too much be eliminated or there could again be spatially coincident thinkers of a maimed cerebrum and one of its hemispheres after the other is destroyed. It is well-known that thought can be produced even after a person loses a cerebral hemisphere to injury or disease. So, there will just be (philosophical) atoms arranged hemisphere-wise. Otherwise, it seems that there will be two thinkers after the right hemisphere is destroyed, the now smaller maimed cerebrum-size thinker and the remaining cerebral-size hemisphere. One extremely unattractive alternative to either eliminating cerebra or accepting spatially coincident thinkers is to have a hemisphere pop out of existence when the cerebrum is reduced to its size and comes to consist only of the matter that formerly composed that hemisphere. It is very hard to believe that

<sup>7</sup> An undamaged cerebrum will not be conscious if its brainstem is defunct.

<sup>8</sup> Furthermore, even after the animal increased in size beyond its allegedly thought-generating parts and became a derivative thinker, it is not clear that such derivative thought would not really be genuine thought. It is typically believed that the animal digests in virtue of its digestive system non-derivatively digesting, but we do not then claim that the animal does not really engage in digestion. Nor do we claim that a digestive disease is not really a disease of the larger human animal. Therefore, why then deny that derivatively thinking is really thinking? Hence, the problem of too many thinkers is not avoided by claiming the animal thinks derivatively.

<sup>9</sup> McMahan and Campbell would claim that the part of the brainstem involved with awareness (reticular formation) can be disentangled from the brainstem parts involved with controlling autonomous processes integral to animal life. Then the life capacity controls could be incapacitated but the thought generation remains (2010, 294). This might allow thought without life processes. I will return to my doubts later about the prospects of thought without life processes.

something, say the left hemisphere, goes out of existence because of the destruction of something external to its boundary such as the right hemisphere. A perhaps even more counterintuitive alternative is to alter the logic of identity and allow objects like the cerebrum and one of its hemispheres to be identical at one time but not another. They were distinct before the other hemisphere was destroyed, identical afterwards. Most readers will not be able to comprehend how something like the maimed cerebrum and the remaining hemisphere which have become identical at  $T_2$ , possess then the property of having earlier at  $T_1$  been larger (consisting of two hemispheres) and not (consisting of just one hemisphere).

It thus seems that the Embodied Mind view of McMahan and Parfit will have to avoid a pair of co-located thinkers by requiring that the world not include any animals or other anatomical entities that could be reduced in size to that of the person or the person reduced to their size. That probably means a very sparse ontology devoid of organisms that has just thinkers as the only composites. Dowland calls this “Embodied Mind Sparsism” (2016). An alternative is a somewhat sparse and gerrymandered ontology that allows composites besides thinkers but eliminates any composites (organisms and anatomical structures such as heads, brains, and upper halves) that could be reduced to the size of a thinker or it to them (cerebral hemispheres). The latter is rather unprincipled and ad hoc, so we will concentrate on the former answer to the Special Composition Question understood as “When do the Xs compose a Y?”<sup>10</sup>

### 3 A Sparse Ontology of Non-Living Thinking Substances

The Animalist sparse ontology has only simples and living composites. One reason the Animalists also adopt a sparse ontology is that like Embodied Mind Sparsists, they cannot allow for there to be anything that overlaps sufficiently with a thinking being as they would themselves be thinkers (Olson 1995; 2007, 215–219). Nevertheless, the identification of human animals with human persons better fits into our picture of the natural world than the Embodied Mind Account of a sparse ontology of thinkers without animals. Ontogenetically and phylogenetically, it makes sense to posit the existence of mindless animals that develop or evolve mental properties than to have no such entities. There is a fruitful evolutionary adaptationist story of mindless organisms arising from mindless species. Mind-producing brains will be selected because they enable organisms to survive longer in order to reproduce more successfully. That is no different from the evolutionary story that explains why the organs and parts of mindless organisms were selected. So, the Animalist’s persons are animals and thus fit in nicely as a natural kind into evolutionary theory. The Embodied Mind’s persons come at the expense of organisms and so do not fit as well. On the Embodied Mind Sparsist account, there is no phylogenetic history of mindless species giving rise to minded creatures. There do not exist any bacteria, protozoa, fungi, and plants! They are to be eliminated from our ontology and paraphrased away as just “atoms arranged bacteria-wise” or “atoms arranged fungus-wise,” etc.

<sup>10</sup> It is unsatisfactory because it does not offer a compositional principle for non-thinking parts, merely allows them to exist as they do not cause too many thinkers problems for the embodied mind view.

The ontogenetic picture offered by the Embodied Mind Sparsist is perhaps as counterintuitive as its phylogenetic account. There never existed any mindless animals that later in their individual development become conscious. Ergo, readers never existed in the first 5 months of their mother's pregnancy because the fetal cells in their mother's body did not compose a thinking entity until the second half of the pregnancy. Rather, readers popped into existence late in a pregnancy when a cerebrum comes into existence as the physical realization of the mind. Moreover, readers could pop out of existence when their cerebra are damaged by a stroke or injury. According to the Embodied Mind Account, it is impossible for readers to enter into and persist in a persistent vegetative state.

Metaphysicians have typically considered substances to be in some sense ontologically more fundamental than non-substances. Substances have historically been construed as capable, in some sense, of existing independently from the entities of the other ontological categories. For example, animals better meet an independence criterion than their smiles. The animal can exist without the smile, the smile cannot exist without the animal. However, it may be that neither human animals nor cerebrum-size thinkers ultimately meet the stringent independence criterion for being a substance. It is not easy to flesh out the independence criterion to produce the intuitive results that we are substances (Koslicki 2018).<sup>11</sup> It may in the end be that we can only establish that the animal is more independent and more fundamental than the brain.

It is not easy to establish that the animal or a distinct thinking person is a substance in virtue of its ontological independence. One problem is that in a world made and sustained by God, his creations are not independent substances. Moreover, if numbers exist necessarily, then we are not substances because we cannot exist independently of numbers. It will not help to rely upon a non-modal conception of essence as we probably also have essential parts like the brain and essential properties—psychological, biological, etc. Even if the brain is not essential,<sup>12</sup> we still cannot exist without our brain complement. It will not do to just construe the independence criterion in terms of depending only upon internal or intrinsic constituents as that will not give an elevated substantial status to organisms while denying it to aggregates, heaps, committees, and non-empty sets. Moreover, we might still have our origins necessarily (Kripke, 1972) and thus extrinsically. So while it is contingent that our parents (or their gametes) existed, we necessarily depend upon such contingent, extrinsic beings.

A response to the foregoing challenges could be that our origins are not essential; we do not require a brain (Shewmon); and while we could not exist without our brain complement (or left side or upper half), these are not real parts but gerrymandered fictions.<sup>13</sup> The only parts we have are philosophical atoms (partless particles) arranged brain-wise and brain-complement-wise, and none of them are essential. But such

<sup>11</sup> There is a vast literature trying to work out the proper sense of independence. Attempts are many and each is launched believing predecessors have not successfully climbed the ramparts to reach their goal.

<sup>12</sup> This might be denied by advocates of the brain death criterion. If a brain is necessary for our continued existence then it would seem that we did not exist before we acquired a brain. Matters are complicated if Condit (2016) is correct that the organism can switch central integrators at birth—the brain taking over for the previous central integrator, the placenta.

<sup>13</sup> I did not even mention the dependence of candidate substance on physical laws. If the forces of the universe were different, the atoms composing our bodies might be pulled apart or contract and there would be no living creature. Perhaps there would not even be any atoms.



moves involve taking on more contentious metaphysical assumptions than most of us would like. So, we are left looking at an account of independence that will not be compromised by the existence of neither necessary beings nor essential properties, parts, and origins. It thus seems that the independence criterion will, after considerable Chisholming, be loaded down with qualifications and restrictions. It may be that we must just fall back on relative independence and claim the animal is more independent than the brain.

Koslicki recommends that we look not to independence but unity to find a criterion for substances (2018: 190–215).<sup>14</sup> Considerations of unity distinguish animals and other organisms from the objects of unrestricted composition, heaps, aggregates, non-empty sets, committees, artifacts, and even organs.<sup>15</sup> The more united an object, the more the parts depend upon each other. This interaction can take the form of capacities being manifested by parts and the whole that would not be realized if not for the contributions of the parts. This teamwork can account for not just the realization of capacities but the very maintenance of the parts, their replacement, and sometimes their very creation. Organisms have more unity than the gerrymandered objects posited by the universalist which includes objects composed of the readers' clothes and their neighbors' computers.<sup>16</sup> The animal's parts contribute more to the properties of the whole (life, thought) than a heap of sand whose holistic or emergent properties like mass are just the unstructured sum of the masses of all the grains of sand. The organs and systems of an organism are in a state of mutual dependence in ways that the parts of artifacts are not. One plank of a table may be glued or nailed to the adjacent one but the planks at the far ends have little role in sustaining each other nor a vital role in sustaining the table. Maintenance of any artifact—repairs and replacements to maintain the unity of parts—must come from outside. Artifacts are not responsible for their unity in the way organisms are.

Alternatively, we can appeal to unity of parts to account for the greater independence of animals than rival candidates for being a substance like the brain. The unity of the animal is maintained by the animal, while the unity of a brain is not maintained by the brain. The animal takes in matter, metabolizes it, builds up itself, removes waste products, uses some parts of the body to defend, and repair others and so on. The cerebrum or brain does little or none of this. The animal grows and maintains itself; though it does so with the aid of the environment, it could still briefly do so without that support. If cut off from the environment, i.e., deprive it of food, oxygen, and water, the animal could maintain itself and function for a while. The cerebrum would not maintain itself, nor function cut off from the animal. Remove a cerebrum from an animal and thought would immediately cease and there would be no maintenance or operation as a whole. Only the individual cells of the cerebrum would appear to operate, thus providing further reason to prefer a sparse ontology of living beings. The cerebrum is utterly dependent upon the animal for its new parts, energy, removal of spent parts, repairs, and so forth. That suggests a cerebrum lacks the independence constitutive of a substance.

<sup>14</sup> What follows is not meant to be loyal to the letter of Koslicki's account of unity.

<sup>15</sup> Koslicki observes that even an independence criterion for substances will probably need a unity condition to distinguish substances from non-empty sets, committees, heaps, and aggregates.

<sup>16</sup> The universalist believes any two or more objects have a sum (van Inwagen, 74).



It may also be that the animal meets the traditional criterion of substances having a bona fide boundary (Smith and Brogaard, 2003) in the way that its parts—cerebrum, right and left sides, top and bottom halves, etc.—do not. Even though we cannot exist without our left or right sections, they are not completely independent from their environment (on all sides) as we are from ours. There is no space between the left and right sides, nor is there qualitatively different material distinguishing them. Animals are occupants in a niche, not mere parts of something larger (Smith and Varzi, 2000; Smith and Brogaard, 2003). Cerebra have mere fiat boundaries like zip codes, the boundary between your shoulder and arm, or that between your office and adjacent hallway when the office door is open; they lack a “spatial discontinuity” or “qualitative heterogeneity (of material constitution, texture, or electric charge)” (Smith and Varzi: 402) characteristic of the bona fide boundaries of substances.

Of course, in the sparse ontology of the Embodied Mind Account, the cerebrum would not be part of an animal body for the latter would be eliminated. What was called the “animal” or “body” would be paraphrased as atoms arranged animal-wise or body-wise. But that still does not provide the cerebrum-size person with a bona fide boundary or render it an occupant in a niche, despite entailing that it is not a part of an animal. Even in a sparse ontology, cerebra (upper brains) are attached by atoms arranged “midbrain-wise” or “lower brain-wise.” There still would not be a bona fide boundary between the cerebrum and atoms arranged body-wise. There will not be the gap between the cerebrum and those atoms while there is a bona fide physical threshold between the animal and the “matter of normally lower density (air or water) in the space surrounding the individual and the matter in the individual’s interior” (Smith and Brogaard: 48).

It is also a strange compositional principle that the Embodied Mind Account must adopt. The Xs compose a Y if they are directly involved in the production of thought. Unlike the Animalist’s explanation that the Xs compose a Y if they are caught up in life, the Embodied Mind theorist does not explain why those parts come together and stay connected to produce thought. Life processes explain the presence of the animal’s parts. It is the causal glue.<sup>17</sup> Thought does not explain the presence of the person’s neurological components. They are not where they are because they produce thought, but thought is produced because they are there. They are where they are because of the causal connections characteristic of living entities. Contrast the Embodied Mind Account’s compositional principle with those compositional principles considered by van Inwagen such as contact, fastening, cohesion, fusion, and life (1990). There is more “glue” to such principles of composition than found in the appeal to thought production. These all serve to explain why the parts composing an object are where they are in view of their causal powers to combine with each other.

All the parts of the animal are where they are because of life processes; the animal eats, drinks, and inhales and then breaks down, rearranges, positions, maintains, removes, and replaces its parts. The life event causally explains why the animal’s parts are there. Contributing to thought does not tell us why the parts of the cerebrum are

<sup>17</sup> Van Inwagen claims “parthood essentially involves causation” (1990, 81). He finds it helpful to approach the Special Composition Question as if it were a practical rather than a theoretical question and ask “What would one have to do or – or what one could do – to get the Xs to compose something” (31). This focuses us on “What multigrade relation must the Xs (be made to) bear to one another in order for them to form a whole” (31).

there, what holds them there, how they are maintained while there, and then are replaced when they no longer capable of making a contribution to thought production.

If we have genuine compositional principle with *causal glue*, then when the Xs ceases to satisfy it, the Y is destroyed—bridges collapse, roads crumble, and organisms decay. Brains that no longer produce consciousness because of say a glitch (even a permanent one) in the brainstem need not collapse, crumble, or decay. Everything could stay where it was in the same in the absence of thought.<sup>18</sup>

Of course, universalism might seem like a compositional principle that does not rely upon any causal glue.<sup>19</sup> Universalism entails that any two or more objects composes another. So your trout dinner and your thanksgiving turkey are parts of Lewis's turkey trout, though it certainly will not be described in any field naturalist's notebook, nor are its two better known parts found in the same zoo cage or aquarium tank. My first response is that the absence of causation between the parts is a good reason to be suspicious of universalism's composites. Unity considerations also weigh against universalism which holds that every gerrymandered combination is a substance.<sup>20</sup> But universalism is still principled in the way that an appeal to capacities like thought is not. Universalism is not arbitrary as would be if it claimed only half the things in the world could be combined in any manner whatsoever to compose a larger entity. Alternatively, universalism is not unprincipled as would be a compositional account declaring that there are arms but no legs because throwing a ball is a composition forming capability while kicking a ball is not. My contention is that claiming the Xs compose a Y because they produce thought is like saying the Xs compose a Y if they contribute to ball throwing. The capacity for ball throwing will not explain why the Xs are where they are and why they stay there. They would be that way even if there were no balls to throw. Likewise, a brain could have its parts arranged that way if it did not think but was henceforth unconscious. Appeals to involvement with thought are akin to picking a capacity like throwing or kicking as a compositional principle. It is an arbitrary choice of one of many capabilities. You and I are capable of lifting and throwing large boulders that neither of us can throw alone but that is not a principled reason for saying you and me (along with the boulder?) compose anything.

#### 4 Individuating Thinkers and Lives

I suspect that advocates of the Embodied Mind Account may be misled by the truth that thought could continue if the human animal is reduced in size into accepting the falsehood that such removals show that earlier it was only some of the parts of the animal that produces thought (Persson 1999: 522).<sup>21</sup> The mistake is not to appreciate

<sup>18</sup> Perhaps the cerebrum will gradually wither somewhat with non-use.

<sup>19</sup> van Inwagen actually believes that universalism is not really an answer to the Special Composition Question because it sums overlapping objects and composition does not. (79). The "Xx compose Y" is an abbreviation for "The Xs are all parts of Y and no two of the Xs overlap and every of y overlaps at least one of the Xs" (van Inwagen, 29). Nevertheless, van Inwagen insists that we must take universalism seriously since it is at odds with all the moderate solutions to the Special Composition Question.

<sup>20</sup> Universalists might distinguish substances from other composited on the basis of independence, unity, or naturalness.

<sup>21</sup> The famous transplant intuition that persons can be relocated when their cerebrum is severed and moved from one body to another or from one body to a vat reflects the same idea motivating the amputation or destruction of the animal's parts surrounding the cerebrum.

that what earlier made those amputated toes and fingers into parts of the thinking animal are the same life processes that integrate the neurological parts that McMahan, Campbell, Reid, Dowland, Persson, Parfit, and Hudson contend produces thought. The animal needs to be alive to think. Following van Inwagen, let us give the label *Life* to the event consisting of the biological activities that distinguishes a living human animal from a dead one. *Life* contributes to thought. And *Life* is dispersed throughout the body. Since processes do not think, the thinker is the combined matter caught up in *Life* that makes thought possible. The fact that the event of someone's biological life could configure less material than it does is irrelevant. While it is true that *Life* can involve less matter, i.e., someone can become smaller, that does not mean that the life event which makes thought possible was not earlier an event of a larger substance. Since one's thoughts depend upon *Life*, wherever that event is located, so is the thinker of those thoughts to be found. It would be blatantly false to say that the life processes are found only in the central nervous system. We must recognize there are organ systems essential to *Life* that extend beyond the central nervous system, the latter system contributing to thought in virtue of the former providing it with the biochemical necessities for cognitive activities. These biochemical processes are constitutive of thought, not just causally upstream from the production of thought. There is no thought if the brain is not assimilating oxygen, releasing energy, removing waste etc. So it is *Life* that makes thought possible, not a part of that event. And the same life that assimilates, maintains, and removes the matter necessary for neurological function also renders toes and fingers part of the living animal.

Another difficulty with positing a minimal thinker as the Embodied Mind Account does is that little sense can be made of the idea of "direct involvement in a being's thinking" that motivates the position (Olson 2007: 76–98). Olson wonders why if the respiratory and circulatory systems are not *directly* involved with thought, we should consider the oxygenated blood vessels in the brain to be so? (2007, 91) He considers that someone might maintain that the thought is really produced by just the firing of neurons. However, Olson points out that not every part of the neuron is similarly involved in the sending of electrical or chemical messages to other neurons. Some serve other tasks like maintaining structural integrity of the cell or removal of its wastes. This, Olson observes, ought to make "the thinking minimalist uneasy" (2007: 92). Moreover, the neurons will not fire without these tasks being performed. Olson cautions that trying to determine what is *directly involved* in the production of thought is as hopeless as trying to determine which of the parts of the body are directly involved with walking. He insists that the problem is not even one of vagueness—it is not that we have a clear application and then boundary cases. Instead, the fault lies in the notion of *directly involved* being unprincipled.

I want to flesh out this idea of Olson's with an analogy between meal production and thought production. The idea of claiming that only the brain is directly involved in the production of thought is like saying only the chef's cooking of the vegetables in the saucepan is directly involved in the production of the vegetable dish while her picking the vegetables, washing them, cutting and shaping them, freezing or otherwise preserving them, heating the fire, keeping it lit, placing the frying pan on the fire, adding and draining oil in the pan, etc. are not directly involved in the production of the meal. At most, some chef activities are *more* directly involved in the production of the meal than other prep activities like the growing, picking, preserving or storing of the food,

the making of the saucepan, adding oil to it, or lighting and keeping lit the fire under the sauce pan. Maybe this is because they can be used in the production of a different meal. But they are all activities directly involved in the production of the meal and not just upstream causal contributions. The tending of the fire, adding fuel or puffs of air, and removing some of the crispy exterior of the vegetables or non-edible parts or draining the fat or oil is as constitutive of the meal production as placing the prepared vegetables in the saucepan and frequently stirring them.

To elaborate upon what I believe is an illuminating analogy, the body's heat and the body's energy production that enables neurons to fire and receive signals are like lighting and keeping the stove or grill lit and coating the pan with oil. Cutting, shaping, freezing, refrigerating, storing, adding preservatives, seasoning, oil, and other prepping of the vegetables is like the body's maintenance and perfusion of the brain's neurons which keeps them free from damage, toxins, decay, disease, etc. The removal of fat, stems, leaves, oil, or cooking residue is like the body's removal of waste productions created by the brain's chemical reactions; the planting, growing, tending, picking, and preparation of the food is akin to the body's growth, fine tuning, pruning of the brain's neurons, etc. Maybe, the firing of the neurons is like the placing and stirring of the food in the saucepan but neither can make a respective claim to solely being directly involved in the production of the meal or thought and everything else done by the chef or animal body not being directly involved. Life processes are not just something earlier and causally upstream of thought production. The very activities of the brain such as neurons firing are dependent and thoroughly intertwined with life processes— heating, energizing, fueling, protecting, stabilizing, building, maintaining, and removing matter. The neurons fire because they are alive and they are alive and functioning because they are caught up in the organism's life processes. Life is constitutive of thought.

What also might mislead people into thinking that there is an embedded part directly producing thought is the conjectured possibility that the cerebrum or brain could think for at least a moment after circulatory/respiratory death (Chiong 2006) or when removed from the body (Dowland 2018). First, I want to caution that we should be wary of building too much of our metaphysics of what we are upon speculations about what would happen in the seconds after death, especially in a thought experiment with a detached cerebrum. Anyway, I suspect that the conjectured brief thought is really being misinterpreted as showing that the brain is producing thought and the supervenience base of thought production is in the brain while the body's contributions are just upstream causality. My response uses the analogy of a television screen that will flicker for a moment after being unplugged because of a last surge of energy sent from the outlet. I do not think that shows that the mere flat glass television screen really produced the image but merely is the place of its brief display as the entire television and its power source produced the image. By analogy, the detached cerebrum does not produce thought even if there was a flicker of thought "located" in it after decapitation. The thought was not produced by just the cerebrum but needed the brainstem, just as the image was produced by the power source and the television's various mechanisms. It was merely displayed but not generated by the television screen. Imagine a television being destroyed in the following order: The television's power source (battery, outlet) is destroyed as soon as it emits the power. Then the wires or conduits are destroyed once the energy passes beyond them. Next, the television's various mechanical parts that

have a role in “interpreting” and “transforming” the signal that end up “producing” the image that operates between the cable, satellite dish, antennae, etc., and the television screen are destroyed after they each make their contribution to creating an image on the screen.<sup>22</sup> So by the time the image appears on the screen, everything beneath and before and behind it has been destroyed. We are left with the flattest of “televisions.” We would not claim that the razor thin screen produced the image. Likewise, we should not claim that the detached cerebrum produced a thought but was merely like the screen display of a flicker of an image or thought that it did not produce.<sup>23</sup>

## 5 Conclusion

I have argued that if people are not animals, but small proper parts of them, then pace McMahan and Parfit, there remains a threat of spatially coincident thinkers. This can be avoided at the cost of the sparsest of ontologies, one in which there are no larger entities that can become reduced to the size of the brain or cerebrum-size thinker. Likewise, there cannot be any smaller entities such as cerebral hemispheres that the brain or cerebrum can be reduced to in size. This will be a rather implausible ontology as such thinkers will not fit well into the natural world, meet traditional independence or unity criteria for being substances, nor provide a compositional principle with causal glue. The importance of the brain in the production of thought has been confused with its being the thinker. The mind of the Embodied Mind Sparsist account is an arm chair abstraction. It is in no better ontological shape than are armchairs in its own sparse ontology.

## Compliance with Ethical Standards

**Conflict of Interest** The author has declared that he has no conflict of interests.

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<sup>22</sup> Hopefully, this primitive account of electronics can be replaced with an sophisticated and accurate account that is still analogous.

<sup>23</sup> This should serve as the basis of a response to the so-called Remnant Problem or the Creation and Destruction Problem. They only get off the ground if the detached cerebrum could think on its own. Descriptions of these problems are available in Parfit (2012), 13; Olson [Forthcoming](#)).

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