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# A Mental-Physical-Self Topology: The Answer Gleaned From Modeling the Mind-Body Problem

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**Abstract:** The mind-body problem is intuitively familiar, as mental and physical entities mysteriously interact. However, difficulties arise when intertwining concepts of the self with mental and physical traits. To avoid confusion, I propose instead focusing on three categories, with the mental matching the mind and physical the body with respect to raw inputs and outputs. The third category, the self, will experience and measure the others. With this new classification, we can see difficulties clearly, specifically five questions covering interaction and correlation. We break down the problem using both existing theories and a hypercube topology representing the solution. We show any satisfactory theory must explain both spatial interaction and content correlation, and that we cannot escape our topology, whatever our preferred fundamental substance and mind-body movement permutation. We conclude by looking outside the hypercube, noting how solutions such as existential monism, priority monism, and will-based cosmic-idealism avoid the dangers involved.

**Keywords:** mind-body problem, self, cosmic-idealism, hypercube, monism, free will

## 1 Introduction

We are implicitly aware of physical and the mental. The physical concerns the outside world and the parts of one's body that obey physical rules. The mental concerns the experience of sight, touch, taste, and other senses, in addition to

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the thoughts that lead to the relevant experiences. Yet, how do they interact, and what agent, if any, keeps track of both?

I wish to propose a new framework for this mind-body problem, separating the items measured and experienced from the entity processing them. What if we have three categories instead of just the mind and body? What if we instead reconcile the “physical”, “mental”, and “self” in a “mental-physical-self” problem? The physical will cover concepts such as matter and energy, and the space in between. The mental will cover any thoughts, or qualia, we might have, and any mental experiences, objects, or Platonic forms associated with these thoughts. Defining the self is trickier, as one might start with physical or mental properties and wonder how the self relates to the other set of properties. However, for present purposes we will define the self as an ontologically agnostic combination of a physical body experiencing physical states and mental mind experiencing mental states. We will work with the self as a separate category, suspending judgement as long as possible on whether the self is physical, mental, both, neither, or even exists.

With this new taxonomy, we strip out ambiguities concerning the self and demarcate points of conflict and essential questions that a plausible mind-body theory must address. After surveying how current solutions consistently fail within our taxonomy, establishing its credibility, we will then construct a model utilizing the categories which any mind-body solution must incorporate. We then examine the model’s permutations, and notice both issues the model raises and how the model simplifies pain points regarding fundamentality and change. We note we cannot escape our model, and conclude by breaking out of our box and noting remaining hypotheses.

## 2 Defining the Conflicts

The mental, physical, and self are useful categories when breaking down the mind-body problem. There is much to fill in, depending on the mind-body theory on offer and the categories’ ontological status. Still, while suspending judgement we can note the apparent conflicts.

The first conflict, concerning interactions in the mental/physical relationship, covers the relation between physical and mental states. How, for example, might a variety of physical apples on a tree all generate the same mental form of red? Why does a particular subset of matter clump together to give a particular mental experience? We can go further though. In addition to this how question, this “interaction” question, we also should emphasize the “spatial correlation” question. Why do different mental states appear to correspond to related spatial physical situations? As I walk toward the apple tree, why is the tree getting larger

in my field of vision? Each image is distinct, yet they are all related to the tree and my distance from it. Half of the images could just as easily be an image of a mountain half a world away. I could just as easily see the tree, then the mountain, and then the tree again, but this time from another vantage point, perhaps above it, or from the other side.

The physical/self conflict includes the interaction questions of how a self is generated, sustained, and ended in a spatial universe. What first comes to mind is birth and death, although we could continue this further into other modes, such as how we seem to lose consciousness when we sleep, and how we regain it later. Yet there are other questions, such as why humans have consciousness, and not a hurricane. Wind and moisture flow into and out of both, in addition to any solid matter caught up in them, yet why do we say one is conscious and the other is not? It may strike an outside observer as arbitrary.

The mental/self conflict touches on a few questions. The first resembles the interaction questions of the other conflicts. How do we cycle between mental states, such that I might see the color red at one moment, and the color green in the next? We cannot just say that the forms of red and green are just there, static, for why would we move from one to another? We also have the complication of potentially supporting transitions without much in common, seemingly non-spatial. For spatial physical realms, we can always say a body is looking at red apples, and then it tilts its head slightly to now look at the tree's green leaves. Yet, when transitioning from the form of my thoughts about lunch to the form of remembering a joke from last week, what exactly is happening? How could one in any sense follow from the other?

The second question is one particular to the mental and self categories, which concerns the appearance of free will. It may be libertarian, such that I choose to shift my focus from lunch to a joke from last week. It could be compatibilist or absent, wherein the quandary of Chinese food versus Italian causes my mind to deterministically seek solace somewhere else. Whichever we choose, why does it seem that the self causes mental transitions to occur?

To summarize this section, we will focus on the following questions. They are expressed with a “ $X/Y - Z$ ” form, where  $X$  and  $Y$  are categories experiencing difficulties concerning the topic  $Z$ . A satisfactory theory must explain all questions, even if some are easier to answer for that theory than others. There are potentially more questions and correlations (for example, how do we epistemologically integrate logic itself?), but these are enough for our current purposes:

- (1) “Physical/Mental – Interaction”: How does a physical state clump together and correspond with a mental state?
- (2) “Physical/Mental – Space Correlation”: Why are mental states phenomenologically related to adjacent physical, spatial states? This question holds for

both actual and potential physical correlations. Why does an apple tree get bigger as I walk toward it, instead of seeing, say, a mountain instead? Why before actually walking can I imagine and picture the tree growing larger?

- (3) “Physical/Self – Interaction”: How does a physical state generate a self and sustain its existence, or how is a self get tied to a physical state?
- (4) “Mental/Self – Interaction”: How does a self cycle between mental states? If forms exist, how does the self cycle between mental forms?
- (5) “Mental/Self – Will Correlation”: Why do mental thoughts correspond to an appearance of free will.

## 3 Existing Approaches

### 3.1 Dualism

These categories are generalizations leaving out much complexity. However, we can now survey existing approaches to the mind-body problem, and how they fit with these five questions. We will not address every point, as this material is familiar to many, but this exercise will show the problems each approach has within our taxonomy. This is not the last word on any of these approaches, as there is much more to discuss for each, but we will show the appropriateness of our framework for describing difficulties.

We will start with dualism, where the body is physical but the mind is not. This can take many forms. For example, the mind and the body might be two different substances, as in substance dualism. We could have property dualism, where we are dealing with one substance that somehow has mental and physical attributes. There is also parallelism, where the mind and body are distinct but do not affect each other directly. We also have epiphenomenalism, where physical events may cause mental events but not vice versa, in addition to emergentism, where the mind somehow arises from a physical system, perhaps supervening on it. These last two may still be dualism, in whatever sense that the mind is completely separate from the body, although perhaps emergentism is more physicalist and not dualist per se (Westphal 2016).

These views are a sample, but they show the complexities involved when trying to fit together two different kinds of things. They each have their own strengths and weaknesses, but they share some commonalities. To start with, all dualist theories have problems with both the “Physical/Mental – Space Correlation” and the “Physical/Self – Interaction” questions. Why should any mental state be equivalent or reflect physical locations, however we define the physical and mental,

if physical and mental are different things? I could see an apple tree, take a step toward it, and then for some reason see a star in the Andromeda galaxy in the next. Perhaps physical, spatial rules help define movement between thoughts, but why are the contents of mental thoughts correlated? In addition, for the other question, how is it that a self that can engage the mental just happens to emerge from a particular collection of space, atoms, and/or mental states? (Westphal 2016).

We also have perhaps the central implicit question of dualism, which is the “Physical/Mental – Interaction” question involving two independent things. If the body is physical, but not the mind, how can they even interact? In parallelism, all mental events just happen to correspond with the physical. In substance dualism, epiphenomenalism, and emergentism, mental events are somehow tied to a physical state, with the particular state of atoms in a brain. However, nothing physical seemingly requires these mental states.

The non-property dualist cases have some advantages though. To start with, we do not have to worry about the “Mental/Self – Will Correlation” question as much. If we have free will, whether compatibilist or libertarian, and the mind is an independent entity, then our willed thoughts could easily coorelate with this mind. This helps with “Mental/Self – Interaction” too, as the independent mind can cycle between mental states and forms that involve free will.

Property dualism has almost the opposite problems as those of other dualisms. In this theory, we can say that the one particular substance has both physical and mental attributes. Perhaps an apple just has a mental object of “red” associated with it, and regarding the apple is the same as regarding this color. This helps with the “Physical/Mental – Interaction” question, as we could say the apple is just red and we in certain situations could substitute one for the other. Property dualism is similar to other theories. For example, we have panpsychism (physical items have mental states), panprotopsychism (groupings have conscious states), or even the double aspect theory (mental and physical are two different ways of regarding without mind-body interaction) (Westphal 2016). These overlap a bit, but whichever we choose there is some ambiguity. Is there a physical-self identity with regards the mental, or physical-mental identity with regards the self? Whichever we choose, we have something like the combination problem of panprotopsychism. In this problem, the raw materials of these groupings somehow combine into a conscious self (Westphal 2016). Perhaps the physical and mental are the same, but we then get the “Physical/Self – Interaction” and “Mental/Self – Interaction” questions. We might instead emphasize physical-self identity, but then we would reopen the “Physical/Mental – Interaction” question.

Further, property dualism and related theories have some problems with the “Mental/Self – Will Correlation” question. Why do mental forms just happen to correspond to a free will’s thoughts? Perhaps this is conceivable somehow,

yet any such grouping we might define is arbitrary. My thoughts might keep my body alive, but the fact that they correspond to the physical human body at all is coincidental.

### 3.2 Neutral Monism

Neutral monism is another model, where the physical and the mental are both aspects of something that is neither, but more fundamental. However, there can be some ambiguity what exactly this means. Perhaps this substance is neither physical nor mental, or somehow both mental and physical at the same time. We might just say groupings of the substance can be, or are, mental or physical, without touching on the substance itself. Perhaps the substance just is what it is, but physical and mental laws apply to it (Stubenberg 2018).

We have to be careful with the exact definition. For example, if the substance just shows physical and mental properties, this might be property dualism (Stubenberg 2018). We can address these redefinitions under other categories. However, assuming we have a new definition, we still have the questions of the self. How is the self generated, ended, and sustained? Further, how can the self interact with this mysterious substance? It cannot be the substance itself, if the substance itself is the thought, because how would the static thought change? If we have a red ball, and I am the ball and I experience the red, I cannot just decide to experience green, because the redness is part of what I am. In contrast, perhaps the substance somehow generates the self, but how does this differ from clearly defined physical and mental solutions? We cannot just define away physical and mental fundamentality entirely. We must answer the five questions, and how the correlations and interactions might occur, with whatever represents the physical or the mental. This is true whatever the underlying substance, whether we are talking about types, tokens, groupings, properties, laws, or the substances themselves.

### 3.3 Physicalism

Physicalism is another potential solution to the mind-body problem, where all is physical, including any mind. There are a number of potential paths to take, including behaviorism (the mind as behavior), identity theories (the mind is the brain), or functionalism (the mind as computer software). We have to be careful that these theories are really physicalism, and not equivalent to something else, as functionalism might be to property dualism (Westphal 2016). These theories each can be evaluated on their own merits. However, they, and others which affirm the validity of the mind, have a few common strengths and weaknesses within

our framework. We will not need to worry about the “Mental/Self – Interaction” question, if the mental is somehow physical, and we can subsume it into the corresponding physical and self question. Further, if thoughts are tied to the physical situation a body finds itself in, then the will and spatial correlation questions are partly answered, such as when I will myself to flee from a hungry tiger staring at me from a few meters away. We still, however have the “Physical/Mental – Interaction” question if we affirm qualia. The tiger could be blue and green, instead of orange and black, and I would still wish to flee.

We might wish to sidestep any mental theories entirely by advocating an eliminativist view, where consciousness as such isn’t real, but something else, and what we call the mind might be regarded as folk psychology (Westphal 2016). Perhaps this is the case, and we don’t have a central location where systems come together to generate a unified thought. Perhaps we lack a self (Gennaro n.d.). Yet, we still have “Physical/Mental – Space Correlation” issues, even if we don’t want to admit the mental as such. Perhaps there are no thoughts and no qualia, but there has to be some correlation with the mental and the surrounding physical system, however we define the mental. Our proto-thoughts do not have the same status as, to be fanciful for a second, images of unicorns frolicking on a beach in a parallel dimension, but should somehow originate in and consist of information about the physical world around us. Fortunately, other physicalist theories such as behaviorism or functionalism do not have this issue. If the mental thought corresponds to a certain action, or a specific function, we can at least say a human body is doing the task given.

We also, for eliminativism as for other physicalist theories, have the “Physical/Self – Interaction” question. We might have multiple parallel systems running in the human brain, but if the body and surrounding systems are simply billiard balls bouncing off each other, why do we care about only the processes occurring within the flesh of a human body? Why not a human body, plus the mountain I see in the distance, plus a star in the Andromeda galaxy, integrated together? We are committed to at least some self involving our body, to support whatever it is that helps us decode the surrounding world.

### 3.4 Idealism

The next view, idealism, might be understood stating that the universe is mental at its most basic level. There are a variety of idealisms, from saying that certain facts are mental to the mental playing a role in clarifying facts. One is metaphysical idealism, which concerns whether the basic structure of the universe is mental (Chalmers 2019). This fundamentality is what we should focus on.

When defining an idealist system, there are three different starting points we might use, either a micro level, macro level, or cosmic level. First, micro-idealism is the view that the mental is associated with microscopic items such as photons or parts of an atom. Next, cosmic-idealism holds that we should start with a cosmic object, such as the universe or a godlike figure. Finally, macro-idealism is an intermediate view where the mental is based in beings such as humanity or other animals. These starting points can overlap with other systems, such as phenomenalism. For example, strong metaphysical phenomenalism is a form of idealism, where facts are rooted in possible experiences (Chalmers 2019).

There are some commonalities shared by the three starting points. To start with, since the physical is ruled out as fundamental, we can say on a first pass that there is no problem with any of physical interaction questions. There is no physical to be concerned with, especially if we take a macro view where human experience is paramount, or a phenomenalist view where we just rely on experiences. However, we run into difficulties with micro and cosmic views. For micro views, we run into the combination problem, which asks how these microexperiences of small subjects merge into macroexperiences of larger subjects. In cosmic views, we run into a related constitution problem, where a universal mind somehow encompasses macro minds (Chalmers 2019). In the sense that these relate to the spatial order of our universe, we have physical to mental and self interaction issues.

There are also “Physical/Mental – Space Correlation” difficulties, with which all views but cosmic idealism have an issue. For example, there are concerns with micro-idealism and space and time correlation. There also may not exist small particles, but fields and functions, perhaps tied to the universe itself (Chalmers 2019). One can think of similar concerns for macro systems. Further, phenomenalism itself has issues with experiences appearing in a particular arrangement (Westphal 2016). Why does an apple tree appear larger as I walk toward it, instead of seeing something from the other side of the planet? At least in cosmic-idealism, there can be only one being from which we need to devolve space, time, and wave functions (Chalmers 21).

These physical problems also cause difficulties relating the mental to the self. For example, the combination and constitution problems are also “Mental/Self – Interaction” difficulties. We might avoid this in macro systems, but we still have the related question of how a self can even shift between mental states. Free will might drive some shifting. Yet, if I am stung by a bee, I may not wish for the feeling of pain. However, it comes upon me anyway, so the interaction question is not fully answered.

Free will correlation is not a problem for macro-idealism, as it makes sense for humans to will their next thought. It also makes sense in cosmic-idealism,



as perhaps a godlike figure wills our thoughts, or devolves to us the power to will our thoughts. However, there are concerns in micro-idealism. Can the wills of independent microscopic beings consistently align to generate an apparently unified human will with a unified human thought?

## 4 Spatialness of Each Category

There are more theories and combinations of theories to the mind-body problem, but these give a general idea of the issues and failings at hand. We implicitly have a grasp of the physical, mental, and self, and the importance of each, as shown in our taxonomy. Yet, when proposing a theory, we neglect the interweaving of all three principles, while failing to give satisfying accounts for all interaction and correlation questions. Because of this, we find the theory wanting and look to another.

So far we have mostly engaged in review, albeit within the framework of the five questions for the three categories. However, we can now move forward recognizing each category's importance. The next step is to emphasize the "spatial" nature of each category.

Each category in some way is spatial, and each of its problems are spatial problems that must somehow be addressed. This is most intuitively true for how we might define our physical universe. Yet we should note that saying something is spatial for our purposes means a few things. First, it gives an implicit framework for objects to be separate from each other. If I have two rocks that are a meter apart, there is no confusion that they are the same object. I cannot push the rocks together so that they occupy the same space. Further, there is a framework wherein they can maintain their existence over time. Whether conservation of matter or energy exists or not, it is easy to say that the same rock occupies the same position of space from one moment of time to the next. For non-spatial entities, one has to find other ways to define separation between objects and continued existence.

Also, when something is spatial, it means that when I walk outside, I will not end up somewhere in the Andromeda galaxy. To get from this planet to that galaxy, I would have to travel many light-years away, without shortcuts to get there. Perhaps there are wormholes, or some other unknown process in physics that allows me to affect something far away. However, this will just shorten the distance a bit, or enhance my field of action from my current spatial position. I cannot however, just move from point A to point B without intermediate movement.

One might think of the mental and self categories as nonspatial. For example, mentally I could will myself to think through a wide range of thoughts. However, no matter how mental and self movements might seem, we can always construct

spatial models using the principles outlined above. Say we have a Cartesian 2D grid with mental states and forms along one axis, and the self along another axis. Say one particular self is at  $x = 1$ , and each possible thought is a whole number along the  $y$  axis. (1,1) would be one particular self thinking one thought, and (1,2) another. Through free will or another mechanism this self can think almost any thought, represented by going from (1,1) to, say, (1,1,000,000), but not others, such as the mental forms of a bat from (1,2,000,000) to (1,3,000,000). We can always add more connecting dimensions to our model, so that if the self wants to think a different thought without experiencing intermediate thoughts, it can travel one space via a linking dimension to (1, 2), (1, 10,000), or (1,1,000,000).

This model matches the spatial conditions laid out earlier. Every self and mental object combination is separate from others, and not in the same place with identical coordinates. They can maintain their existence over time. Also, a human self at  $x = 1$  could not access a bat's forms, demonstrating spatial distance and separation keeping humans from the full range of mental options.

Academic perhaps, but is this really useful? It is, and it shows how reimaginings of the mind-body problem and their revealed insights frequently amount to little. For example, it is easy to see the self as a constant thing that somehow overlaps physical and mental space, just changing positions. However, this is not true in all theories, such as panprotopsychism. In these theories it is physical and mental states that are fundamental, somehow rearranging and combining to form the entities that we refer to as the self, although with an unknown mechanism awaiting resolution through the combination problem. Yet, does it really matter whether the self is more fundamental instead of being constructed or emergent? Perhaps, but not in our model. Instead of a human self moving from  $y = 1$  to  $y = 2$ , we just have the thought in its position moving from  $x = 1$  to  $x = 2$ , through it "willing" itself to move through various interactions and resulting combinations with the physical realm. Any problems we have moving along one axis we can see just as easily as spatial problems along another axis.

If we still deny that the mental and the self might be spatial, another approach is to reverse the question and ask what grounds there are for denial, at least with respect to our three points. Are mental and self objects never separate from each other? An image of an apple tree is not the same as that of an Andromeda galaxy star, and my neighbor and I are not necessarily in the same place thinking the same thought. Could mental and self objects maintain existences over time? An apple tree image with the same phenomenal Platonic form is conceivable, in addition to something about a human remaining constant. Are there distances with mental and self objects? If I am not physically near an apple tree, and lack a picture of it, I cannot see the apple tree. Thus the mental distance can correlate with physical distance.

Further, for thoughts not tied to physical space, there is some minimum distance of separation however defined, as I am not thinking every possible thought at once. If a self can transition between  $N$  possible thoughts whenever desired, we just need a model of  $N$  separate points and a line between each point. The self will then move along a line, in whatever dimension the line is in, when moving from one thought point to the next. Distances for selves are harder to conceive, as the self while alive appears constant. However, if the self is contingent upon mental properties of an apple tree, selves physically near the apple tree and looking at it may be more likely combinations than self combinations regarding Andromeda galaxy stars, whatever the combination problem's solution. These selves are thus spatially closer in the self axes for the mental property objects.

As a final aside, we might ponder the topology of a mental and self universe, if this underlies reality and is not just useful for modeling. Are there infinite or finite mental and self spaces and objects? Are the fundamental distances of these spaces continuous or discrete? Are many of the potential locations spatially clustered together, as a wide variety of potential human thoughts seem to be? This is unknown, but for our present purposes it does not matter. If we can work with physical space with these ambiguities, we can also work with potential mental and self spaces with the same ambiguities.

## 5 Constructing a Topology

Once we recognize that each category is in some way spatial, through at least some model form, we can now construct a topology of what we want in our mind-body solution. Instead of starting with the solution and thinking how it might fail, let's start with what we want in our solution and then simplify by removing superfluous elements. First, what are the dimensions of correlation we require?

We will start with the physical. Its spatial nature is generally intuitive, although with quantum physics, relativity, and any unified theory that may result, what the actual space is may differ from our intuition. It has as many dimensions as needed. Perhaps it just has just length, width, height, and time, perhaps eleven as in some string theories, or perhaps a different number.

The next dimensions are the mental dimensions. From our correlation questions, I can hypothesize at least two, a willed and unwilled dimension. The willed dimension would cover any thoughts related to potential free will deliberations, and the unwilled dimension any co-relating spatial stimuli.

The third set of dimensions, the self dimensions, are a bit less intuitive. Since we are principally aware of a self through its effects, such as being in a particular position in space, or thinking a certain thought, I hesitate to describe them or give

a number. Yet, it would be such that the problem of other minds is not a concern, and if there are two different minds, they would occupy two different positions in these dimensions.

Now that we have our dimensions, what is the shape that we will construct with them? To start with, we can build a hypercube. We will have as many dimensions of correlation as we want, with independent objects moving around in these dimensions as needed. Any objects moving in a shared space will demonstrate an interaction between the principles that share that space. For example, if the human body is the agent that interprets a physical space into a thought, through seeing light, or touching objects, then the self shares the same space as these physical stimuli. I, for example, am a self currently in a particular space, but a bunch of carbon, oxygen, and other atoms are also in that same space, along with light hitting my eyes and the object touching my hand. Sharing the space, my self can assess the physical stimuli and generate a thought.

With this in mind, we should first rule out a hypercube where each dimension is orthogonal to each other. In this case, nothing really interacts with anything else. We could say stuff just moves around, and even that different selves experience different thoughts at different positions. Yet, if everything is orthogonal, then stuff just happens, with none of the categories' interactions meaning anything.

The reason this does not allow for interaction is that change in one or even two of the categories means nothing in the remaining categories. The matter in human bodies can move around in our universe continuously, and as physical objects react with a variety of stimuli. Yet, if the mental and spatial axes' coordinates are the same, then by definition no new thought has been generated and no births, deaths, or other self changes can occur. We might have a physical and mental identity in panpsychism, yet the self value will not change. Thus, some of the physical, mind, and self dimensions are actually the same, with a dual aspect theory of some sort allowing the dimensions to overlap the same space. The mind-body problem then becomes a task of figuring out which ones these are, even if we have to accept the resulting correlation.

## 6 The Hypercube's Permutations

Stepping back for a minute and just regarding the categories themselves, there are three different paths we might take. The end results resemble and frequently overlap existing mind-body theories, yet we can keep in mind our new spatial perspective while going through the permutations. Treating each category independently, we have:

- Triadism – Similar to dualism, but with three substances, or properties, to reconcile. In our model, this is the case where all dimensions are orthogonal.
- Dualism – Two categories are identical, meaning they share at least one spatial dimension. We must explain how this sharing happens, while noting how the third category might fit in.
- Monism – Only one substance, or thing, somehow manifests into our experience of the three categories. In our model, that means at least one dimension is shared by all three categories.

Triadism, emphasizing all three, would say that physical, mental, and self are separate substances, or perhaps properties of one substance. This would correspond with our all-orthogonal model, which we have ruled out. Yet, even without our model this has conceptual issues. Triadism really encompasses three separate dualisms interwoven together, and we have a hard enough time explaining physical to mental, mental to self, and mental to self individually. If one of the dualisms is impossible, then triadism itself would inherit this weakness and also fail. It is thus a nonstarter.

Dualism is next. This is not the same as mind-body dualism. While the mental may reside on the mind side, and the physical on the body side, in mind-body dualism it is unclear what and where exactly the self is. Is it the mind, the body, or somehow both? Yes, only certain matter makes up our body, and certain mental states or forms are accessed by our mind, but these are just the raw materials, and dualism's issues then become issues of self-generation and self-interaction given these materials. Our new dualism will make these concepts clear.

However we define this dualism, we should first note that the main fault line will be on two of the three categories without clean interactions. In terms of our model, as stated before, this means that two categories overlap one spatial dimension. This gives us considerable freedom as to what to do with the third category. We could say that it doesn't exist at all, where perhaps the self is an illusion, or mental qualia do not exist. Or, perhaps it is the same as at least one category, where, in panpsychism for example, physical space and mental concepts can be the same. Maybe it is somehow in both categories, although since it would not be involved in the fault line's conflict we would say it is inessential or primary in at least one of the others. Whatever we do with the third category, let us concede it to the solution on offer, and focus on the main fault line.

We have six dualisms to examine, three where we eliminate one of the categories, and three where there is an identity between two of them. Perhaps there is not a clean identity, as, for example, physical processes somehow generate a self in a human womb. Yet, if we regard it as a physical law that generates a human self, through certain physical processes in the mother, we can still say that the

physical and the self are the same, just through particular circumstances that are specific to and contained in the physical realm.

The first view is one where we eliminate the mental. We might say that there are no thoughts to speak of, and thus no qualia. However, this view is equivalent to the eliminativist physicalist views discussed earlier. We fail on the physical/self interaction and space correlation questions. With the second view we would assume a physical/self identity and ask how it relates to the mental. However, this runs into the same problems as other physicalist or mind-body dualist theories.

On the third and fourth views we would eliminate the self, or assume a physical/mental identity in relation to the self. This is something like panpsychism, panprotopsychism, property dualism, or neutral monism where only one substance is involved. Without repeating all previous arguments, issues with the self would still falter on something like the panprotopsychist combination problem. How would this physical and mental stuff interact to combine with the self, or self-like states, and what explains any correlations?

The fifth view, eliminating the physical, is a form of idealism, and has the same problems. The sixth view assumes a mental/self identity with relation to the physical. There are still similar mind-body dualist and idealistic concerns, such as how the mental and the self combine, with the self shifting between mental states, and how the physical enters the picture similarly for everyone. Perhaps it is possible for the same physical universe to somehow be dreamed up collectively by a number of independent minds, and for these thoughts to interweave. Yet, since it makes more sense in this picture to assume the physical universe is fundamental, and since we've addressed the physical cases, then let us not pursue this permutation further.

If all the permutations fail, then it does not seem that there is a valid dualism. Since there is not a valid dualism, we cannot support triadism. We are left with monism. However, while still a potential choice, our options are limited. We cannot eliminate two categories and just focus on the physical, mental, or self to the exclusion of others. For example, just positing the self is solipsism. While possible, taken to this extreme non-willed physical and mental effects just appear without reason or laws. Just positing the physical or mental does not allow for change in thoughts and the physical world respectively. We would have physical or mental states move around as billiard balls, but since the billiard balls themselves are constant in their natures, why would anything change?

Further, we might say that there is a new neutral monism somehow integrating the three categories, yet what would we have to work with? We have eliminated a lot of the wiggle room we might have had with other monisms. There

is no ambiguity to use principles of the self to integrate physical and mental properties, as we are already taking it into account. We somehow have to handle three overlapping spaces in our model, and as the dualism discussion showed, two are hard enough.

## 7 Further Interaction Difficulties

We appear to be right back where we started. What then was the point of this exercise? We have tried to go from the bottom-up, but failed after reviewing existing solutions according to the five questions. We have so far failed when going from the top-down, through working with the three categories themselves to build a hypercube that makes sense. However, we know the top of the top-down model works, because it has to work. It is what is required in a mind-body solution.

We do still need our separate dimensions, because they represent our correlations both within and between the categories. Thus, we may just have to accept at least one extremely arbitrary spatial or will correlation between two physical, mental, or self principles. However, in addition to this, there is another consequence of our all spatial model. In short, we may not even be able to interact between the categories. The earlier interaction questions hinted at this, but we can express this more formally. If we are forced to deal with spatial systems, no matter how we frame the problem, we are forced to confront issues inherent in a spatial agent native to one space registering the position in an overlapping space. For example, how might the physical materials making up a human body register as a self in the overlapping self space?

Recent work shows how tricky this interaction might be, independent of any content concerns. Continuing our physical/self theme where both the measuring and measured are in the same physical space, say a rubber ball represents our consciousness. To change to another state, we must deform it so that the ball can actually generate a different thought. Without deformation, then how can the static ball, without information concerning the outside world, know about it? We cannot shift the problem down further into another set of signals, or appeal to external forces such as gravity. Consciousness is native to the ball itself, independent of anything else (Morgan 2017).

Let us not assume, however, that it is the mass of the matter itself that is changing thoughts, but rather the space that the matter is in in addition to the mass. If I go from thought  $T_1$  when the ball is unsqueezed, and then go to thought  $T_2$  when the ball is squeezed, with  $T_1 \neq T_2$ , then our consciousness system involves at least two things. First is the mass itself, which is constant between both states.

Second is a “sensor” that overlaps the exact space where matter was present when unsqueezed, but now is not when squeezed. This sensor would be that which actually translates between  $T_1$  and  $T_2$ , registering the absence of matter in one instance and its presence in another. The sensor is part of the self, which is where the transition of thoughts would occur. The matter of the ball would be the raw physical input that allows for the transition, and does not need to be part of the self. If we were building our simulation further, we would posit more sensors in space, with their combined permutation of whether the spaces are occupied or unoccupied determining which thought is generated. For example, another sensor could register that matter is present in both scenarios in the space not occupied by the first sensor. Then, if we squeezed the ball in the other direction, we could generate a new thought,  $T_3$ , instead of  $T_2$  (Morgan 2017).

We can expand this model and build as many sensors as needed to account for every potential position of the ball in space. Millions or more of matter-registering sensors and their permutations in space could allow for the transition between every possible permutation of thought that the ball could generate. We can subdivide further and further as needed to account for the fine-grained positions a squeezed ball might find itself in. However, we run into a problem as these sensors get smaller and approach the size of a point. In this case, the sensors must eventually reach the size of zero, meaning they cannot truly exist in the space as they have no volume. Thus, we must stop before this. However, if the space involved is continuous, then this leads to inconsistency, as there are always smaller positions in the space that we must account for (Morgan 2017).

We have fewer concerns if the space is quantized, as we could stop and have our sensors be the size of the minimum quantum involved. Alas, we are not free here, as certain issues arise that can lead to arbitrary mappings, such as when handling collisions if two objects were to occupy the same location. Say, for example, we have two balls moving toward each other, such that they would occupy the same space at the same instant of time. In a continuum they would collide and ricochet off each other, and we would have no concern. However, in a quantized space, how would this be handled (Morgan 2017)? Which ball gets to occupy the space? What happens to the other ball, and would any such resolution be consistent and rule-based, and not just an arbitrary ordering and resolution of things, indistinguishable from chaos?

Sensors and the concepts involved are explained in more detail elsewhere, and I do not wish to repeat the scenarios involved fully here. However, for our present purposes, I just want to emphasize that every potential mind-body solution must be cognizant of this interaction problem, and we cannot escape it by



appealing to other models of how two different items interact in the process of generating a thought. At least two elements, whether the physical and self, physical and mental, or mental and self, must interact to support generating an image of the other category.

## 8 Stuck With the Hypercube?

We still might recoil from this model. Why do we even need the hypercube? It may be cute, but if it is just a remodeling of known existing difficulties, how useful is it really?

However, the hypercube just shows that we only have two questions we need to answer: one of correlation, and also one of interaction. Concerning correlation, while something using correlation dimensions must exist, according to our model, it does not seem that we can build a fundamental hypercube with them without accepting universe-wide cosmic coincidences and alignments. These are not a few constants or initial configuration we can explain away by some anthropic principle, but a coincidence in every possible translation between certain mental/physical, mental/self, and physical/self spaces. While technically possible, it is asking a lot, and it approaches the realm where there are no rules at all to explain things, and we just have chaos. However, the hypercube is how these dimensions would interact, and changing our model to, say, a hypersphere or another shape does not resolve underlying problems.

We still might resist, and postulate some other fundamental objects or movement to escape. For example, take a panpsychic or panprotopsychic situation where physical and mental objects must somehow overcome the combination problem and combine into a self. We would not say our ball from earlier deforms in a physical space, but rather that these physical and mental parts of the ball fall in and out of groupings representing the self. Yet, for panpsychism, what exactly would we change in our hypercube for our new situation?

We might say that there is no self space overlapping the physical. Perhaps the ball is not squeezed in an overlapping self space. Rather, the mental properties of these events and relevant physical objects just entwine differently based on physical or mental movements. Yet, what is the combination problem if not encompassing how the self or proto-self remains constant through varied physical-mental groupings? Perhaps the self is generated dynamically, yet if our memory is any guide, our selves have some constancy over time. If we assert a physical-mental identity, we need a self space and a constant enough self somewhere, whether overlapping the physical, mental, or both spaces. For

panpsychism the hypercube's interaction problem then becomes the combination problem. Other mind-body theories have similar interaction problem substitutions. What sensors in any of the three spaces can measure change in another space satisfactorily to model possible combinations?

We might also take a step back and say that there is no ball moving around in the physical space. Perhaps there is no physical space and physical movement, per se, but mental states giving the appearance of movement just start combining differently. However we define the dynamics, if not emphasizing panpsychism and combinations, we might emphasize something else, such as a property devolution or a mysterious neutral monist interaction. However, how do we register these changes if we cannot model movement of some sort?

All mind-body solutions must behave in the following ways, whether dealing with combinations, objects, tokens, waves, or any other permutation. First, something in a mental, physical, or self space needs to change for a self to experience varying mental and physical states. We have a dynamic element to represent the shift between thoughts, selves, and/or physical location. Something else in an overlapping space, different from that of the change, is constant with respect to the change. We have a constant element so this change is rules based, and not equivalent to either chaos or a coincidental dual aspect co-relation. That which is constant must somehow interpret the dynamic element, or the dynamic element must somehow generate the same constant element if we want to reverse it. The overlapping spaces just tie the constant and the dynamic together in a shared space and provide the rules and permutations for how one will interpret the other.

If the constant element is fundamental, it will register the dynamic element through sensors in the shared space. If the dynamic element is fundamental, the sensors when occupied by the dynamic element trigger generation of the same constant element. The direction in which the sensors work does not matter. Either the dynamic element, the constant element, or both could be fundamental; our model is agnostic on that front. Yet, if we cannot explain how a dynamic element moves with something constant appearing to sense and understand that movement, with consistent sensors, why do we need to delve into the fundamentality of the elements, or what exactly the movement of the dynamic element is? First build a mind-body model that makes sense, and then we can worry about fundamentality and how mind/body change happens.

In the end, the hypercube's co-relation and interaction issues substitute for many different hypotheses, whatever our fundamental substance and movement permutation. The hypercube cuts out distractions. In addition to coincidences in content for all mind-body theories, we seem to be forced into at least one

interaction difficulty, one we can formally show in our topology. We cannot deny our model, because it just shows with spatial modeling that objects are separate, can maintain their existence over time, and may be unable to immediately move to all positions. We may have added an extra category to consider in a mind-body-self problem, but through agnostic model inputs we simplified our pain points to the root correlation and interaction problems. Where then do we go?

## 9 A New Fundamental

The only escape I see is to step outside our multi-dimensional box and accept that our hypercube is not fundamental. It certainly exists, because it is how a mind-body solution would work. Yet, there is something underlying it enabling correlation and interaction coincidences. In a way, this is similar to the neutral monist project trying to find a missing element to somehow explain everything. Yet, there are dangers in too often looking within the cube for a solution. We should do away with anything inside the cube entirely.

We step into the cube when we have a multiplicity of agents somehow fundamentally interacting, and this interaction causes the coincidences and interactions we might worry about. Thus, I will posit the following hypothesis: there is no fundamental interaction we might construe as within the cube. At the most fundamental level, things do not change. One might intuit this from interaction coincidences (Morgan 2017), but we can say this for correlation ones as well. If we say this, however, what principle enables the universe to avoid issues such as the constitution problem, where a universal mind somehow encompasses macro minds?

We can be creative at this point, as the answer could theoretically be anything. We could start with either an existence monism, where there is only one concrete token, or a priority monism, where there is only one basic fundamental concrete token (Schaffer 2018). We can try for more to address coincidental interactions and correlations, but descriptors start to break down when there is only one concrete object. It may be “physical” or “mental” (Schaffer 2018), but how does this help?

One set of correlations that sticks out in the hypercube are will correlation axes. How would the physical and mental by themselves address them? We may need to incorporate something resembling human will at cosmic levels to address the intertwined self dimensions. We appear to will our bodies to move in and affect the world, both mentally and physically, and our bodies then appear to actually do this through mental and physical effects. Our wills appear to have causal power. Similarly, a cosmic will could also have this causal power, and if we

wish to answer the constitution problem, we could say that it occurs because the cosmic mind wills it. If humans give birth to other humans that appear to have a will, surely a cosmic mind could do the same.

These are inductive observations, and one is not required to give them weight. However, by assuming this one thing, note the cosmic mind could will away any other cosmic difficulties, whether idealist, solipsist or otherwise. Perhaps this will is cosmic-idealist, or perhaps another universal category fits better. This does leave open a number of other questions, such as whether this will is compatibilist, and how this will “acts” if there is no fundamental change. However, for this proposal let us just say that whatever is aligned with the cosmic will comes to pass, without speculating too much about what is beyond this timelessness.

This view may resemble those of British and German idealists, eastern philosophies, theistic traditions, and others. We also haven’t shut the door on other possibilities, such as the will as acting in its own timestream. This is, alas, another discussion. For current purposes, whatever this more fundamental object is, whether a universal will, divine will, or some other monism, it keeps correlation axes aligned. It also enables hypercube spatial interactions to occur, which could not be fundamental otherwise. This is all we can say at present.

## 10 Conclusion

We gain a number of insights from regarding the mind-body problem through its mental, physical, and self categories. We deemphasize whether the self is primarily mental or physical, and we can tease out five questions of interaction and correlation which need answering. In light of these questions, many of the existing theories of the mind-body problem, whether dualism, neutral monism, physicalism, or idealism, all fall victim, and we show the questions are valid ones with which to judge a potential solution.

Using the categories, we then build a spatial model of a hypercube which we want our eventual solution to incorporate. We then show that many of the various permutations of the model initially do not work. To avoid discarding the model, which just recognizes correlation coincidences and interaction impossibilities, we conclude by thinking outside of the hypercube box and note that something that is not the hypercube must be fundamental. We then posit something else, a form of monism at minimum, perhaps rising to cosmic-idealism to accommodate will-based correlations.

There are still issues to work out. If we posit another theory aside from a minimal monism or a will-based cosmic-idealism, how do we avoid universe-wide chaos, accepting correlations and building a sensor system allowing for

different category interaction? If we accept cosmic-idealism or similar theory, how do our experiences of the three categories derive from this universal object, whether based on a cosmic will or something else? Perhaps this object is divine, or perhaps not, but there should still be some system of laws translating from it to our experiences of space, time, thought, and free will. However, at least we no longer need to insist on fundamentality.

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