Proposed solutions to the questions "Why does a thing exist?" and "Why is there something rather than nothing?"

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Abstract

A solution to the question "Why is there something rather than nothing?" is proposed that also entails a proposed solution to the question "Why does a thing exist?". In brief, I propose that a thing exists if it is a grouping. A grouping ties stuff together into a unit whole and, in so doing, defines what is contained within that new unit whole. For outside-the-mind groupings, like a book, the grouping is physically present and visually seen as an edge, boundary, or enclosing surface that defines this unit whole/existent entity. For inside-the-mind groupings, like the concept of a car, the grouping may be better thought of as the top-level label the mind gives to the mental construct that groups together other constructs into a new unit whole (i.e., the mental construct labeled "car" groups together the constructs of engine, car chassis, tires, use for transportation, etc.). The grouping, or enclosing surface/label, gives "substance" and existence to the thing as a new unit whole that's a different existent entity than any components contained within considered individually. Next, in regard to the question "Why is there something rather than nothing?", when we get rid of all known existent entities including matter, energy, space/volume, time, abstract concepts, laws or constructs of physics/math/logic, possible worlds/possibilities, counteracting forces, properties, consciousness, and minds, including the mind of the person trying to imagine this, we think what is left is the lack of all existent entities, or "nothing" (here, "nothing" does not mean the mind's conception of "nothing", but "nothing" itself, in which all minds would be gone). But once everything is gone, and the mind of the person thinking about this is gone, this "nothing" would, by its very nature, be the complete definition of the situation. That is, the very lack of all would itself be the entirety. Is there anything else besides that "nothing"? No. It is "nothing", and it is "the all". Completely-defines-the-situation/entirety/"the all" is a grouping, which means, by the definition given here, that the situation we previously considered to be "nothing" is itself an existent entity. The surface of this entity isn't some separate structure; instead, it is the complete-definition-of-the-situation/entirety/"the all" grouping itself that is the surface. Said another way, by its very nature, "nothing" defines itself and is therefore the beginning point in the chain of being able to define existent entities in terms of other existent entities. One objection might be that a grouping is a property so how can it be there in "nothing"? The answer is that it is only once all known existent entities, including all properties and the mind of the person visualizing this "nothing", are gone does this "nothing" completely define the situation and become the "the all" grouping and, therefore, an existent entity, or a "something". The above argument can be restated by making the analogy between the question "Why is there something rather than nothing?" and the idea that you that you start with a 0 (e.g., "nothing") and end up with a 1 (e.g., "something"). Because you can't change a 0 into a 1, the only way you can do this is if that 0 really wasn't a 0 but was actually a 1 in disguise, even though it looks like a 0 on the surface. In conclusion, it is argued that "something" is necessary because even what we previously considered to be "nothing" is a "something". This isn't a new idea, but, to the best of the author's knowledge, providing a mechanism for why "nothing" is a "something" is.

A proposed solution to the question “Why is there something rather than nothing?”

Before beginning, I want to raise three points. First, in reading this paper, it's very important to distinguish between the mind's conception of "nothing" and "nothing" itself, in which the mind of the reader (i.e., you) would not be there. These are two different things. Of course, one can't directly visualize "nothing" itself because, as just mentioned, the mind would not be there, but you can try to imagine it as closely as possible and then try and extrapolate to what it would be like if the mind weren't there. Second, is that I'm asking you to challenge the common assumption that the situation we usually think of, and define, as "nothing" really is the opposite of "something". The reason we assume, and define, that "nothing" is the absence of all existent entities, or "somethings" is that we have to visualize "and define “nothing” in our minds, which exist, and are “somethings". In the existent mind, “nothing" just looks like nothing, or the opposite of something. But we don't know if “nothing" itself, in which the mind would not be there, also just looks like "nothing" and, therefore, we cannot assume that. Indeed, as suggested below, it is only once all known existent entities, including the mind that's trying to
visualize this, are gone does that “nothing” truly become the complete-definition-of-the-situation/“the all” grouping and, therefore, an existent entity. Finally, the terms “nothing” and “non-existence will be used interchangeably as will the terms “something” and “existent entity”.

Gefer (2014) has suggested that the seeming insolubility of the question "Why is there something rather than nothing?" is based on a flawed assumption. I agree and propose the following. I think the flaw is that we assume the situation we often visualize as being "absolute nothing" (e.g., the lack of all matter, energy, space/volume, time, abstract concepts, laws or constructs of physics/math/logic, possible worlds/possibilities, counteracting forces, properties, consciousness, and minds, including the mind of the person trying to imagine this supposed lack of all) really is the lack of all existent entities. Instead, I think this situation is itself an existent entity, or a "something". If so, this means that "something" is necessary, or non-contingent, because even what we used to think of as "absolute nothing" is a something. How can this be? The proposed explanation is below. First though, because of the double meaning of the words "nothing" and "something", from now on, I will enclose the phrases "nothing", the "absolute lack-of-all", "non-existence" and "something" in quotes. In regard to the question "Why is there something rather than nothing?", two possible solutions are:

A. “Something” has always been here.

B. “Something” has not always been here.

Choice A is possible but doesn’t explain anything; although, more will be said about it at the end of this paragraph. This suggests that choice B has more explanatory power. Another benefit of choice B is that in order to ever provide a satisfying answer to the question "Why is there something rather than nothing?", I think we're going to have to address the idea that maybe there could have been “nothing” but now there is “something”. This is choice B. So, if we go with choice B, if “something” has not always been here, then “nothing” must have been here before it. In other words, there was "nothing" and now there is "something". Now, if this supposed "nothing" before the "something" was truly the lack of all existent entities, there would be no mechanism present to change, or transform, this "nothingness" into the "something" that is here now. But, because we can see that “something” is here now, the only possible choice is that the supposed “nothing” we were thinking of was not in fact the lack of all existent entities, or absolute “nothing”, but was instead a "something". This is logically required if we go with choice B, and I don’t think there’s a way around that. Another way to say this is to make the analogy between the question "Why is there something rather than nothing?" and the idea that you that you start with a 0 (e.g., "nothing") and end up with a 1 (e.g., “something”). Because you can't change a 0 into a 1, the only way you can do this is if that 0 really wasn't a 0 but was actually a 1 in disguise, even though it looks like a 0 on the surface. That is, from our traditional way of thinking about "nothing", it just looks like "nothing". But, if we could think about, or visualize, "nothing" in a different way, we could see that it now looks like a "something". "Nothing" and "something" are not different things; they're just two ways of describing the same situation: the lack of all entities we usually think of as existing. Overall, this idea leads to the result that “something” is necessary because even what we used to think of as the lack of all existent entities, or “nothing”, is a "something". Ironically, going with choice B leads to choice A. If what we used to think of as "absolute nothing" is actually an existent entity, or a "something", this would always have been true, which means that this "something" would always have been here.

This next point is important: While the words "was" and "then"/"now" in the above imply a temporal change, time would not exist until there was "something", so I don't use these words in a time sense. Instead, I suggest that the two different words, "nothing" and "something", describe the same situation (e.g., "the lack of all"), and that the human mind can view the switching between the two different words, or ways of visualizing "the lack of all", as a temporal change from "was" to "now".

Instead of insisting that "nothing" can't be a "something" and refusing to continue, it's more useful to follow the logic described above and try to figure out how "nothing" can be a "something". So, how can this be? I think it's first important to try and figure out why any “normal” thing (like a book, or a set) can exist and be a “something". I propose that a thing exists if it is a grouping that ties stuff together to create a new unit whole. By tying stuff together, the grouping defines what is contained within. For outside-the-mind groupings, like a book, the grouping is physically present and visually seen as an edge, boundary, or enclosing surface that defines this unit whole/existent entity. For inside-the-mind groupings, like the concept of a car, the grouping may be better thought of as the top-level label the mind gives to the mental construct that groups together other constructs into a new unit whole (i.e., the mental construct labeled “car” groups together the constructs of engine, chassis, tires, use for transportation, etc.). Although I will briefly discuss inside-the-mind mental, or abstract, groupings below, because no minds would be present in “nothing”, because this paper is mainly about “nothing”, and because the same logic applies to both outside-the-mind and inside-the-mind groupings, from this point on, I will generally use the terms surface, edge or boundary instead of label. Now, to continue, the grouping together of what is
contained within provides a surface, or boundary, that defines what is contained within, that we can see and touch as the surface of the thing and that gives "substance" and existence to the thing. This surface or boundary doesn't have some magical power to give existence to stuff. But, it is the visual and physical manifestation of the grouping together of stuff into a new unit whole or existent entity. Another way of thinking about a unit whole is as a "unity". This idea of an existent entity, or object, as a grouping (or bundle), oneness or unity (what is called here a unit whole) is not a new one (reviewed in Laycock, 2017). Indeed, the originator of the question “Why is there something rather than nothing?” (Leibniz, 1714) said “I do not conceive of any reality at all as without genuine unity.” (Leibniz, 1687). One example of a grouping together or unit whole/unity is a book. In the case of a book, the grouping together of all the individual ink and paper atoms and the bonds between these atoms creates a new and unique existent entity called a “book”, which is a different existent entity than the atoms and bonds inside considered individually. This grouping is present as the surface of the book that we see and can touch and that we call the "book". Try to imagine a book that has no surface defining what is contained within. Even if you remove the cover, the collection of pages that’s left still has a surface. How do you even touch or see something without a surface? You can't because it wouldn’t exist. As a different example, consider the concept of an automobile. This is a mental construct in the head that groups together individual concepts/constructs labeled “tire”, “engine”, “car body”, etc. into a new and unique entity labeled as the concept “automobile”. Here, the grouping is not seen as a physical surface but as the mental label “automobile” for the collection of subconcepts considered together. But, this construct still exists because it’s a grouping defining what is contained within. One last example is that of a set. Does a set exist before the rule or list defining what elements are contained within is present? No. The rule or the complete list of elements is required for the set to exist. So, in conclusion, a grouping tying things together and defining what is contained within is an existent entity.

Next, let's apply this definition of why a thing exists to the question of "Why is there something rather than nothing?" To start, "absolute nothing", or "non-existence", is first defined to mean: no matter, energy, space/volume, time, abstract concepts, laws or constructs of physics/math/logic, possible worlds/possibilities, counteracting forces, properties, consciousness, and minds, including the mind of the person trying to imagine this supposed lack of all. Now, try to visualize this. When we get rid of all this stuff, we think what is left is the lack of all existent entities, or "nothing" (here, I don't mean our mind's conception of "nothing", I mean "nothing" itself, in which all minds would be gone). This situation is very hard to visualize because the mind is trying to imagine a situation in which it doesn't exist. But, once everything is gone, and the mind is gone, this "nothing" would, by its very nature, be the complete definition of the situation. That is, the very lack of all would itself be the entirety of the situation. Is there anything else besides that "nothing"? No. It is "nothing", and it is the "all". Complete-definition-of-the-situation/entirety/"the all" is a grouping, which means, by the definition given here, that the situation we previously considered to be "nothing" is itself an existent entity. The surface of this entity isn't some separate structure; instead, it is the complete-definition-of-the-situation/entirety/"the all" grouping itself that is the surface. Said another way, by its very nature, "nothing" defines itself and is therefore the beginning point in the chain of being able to define existent entities in terms of other existent entities. One objection might be that a grouping is a property so how can it be there in "nothing"? The answer is that it is only once all known existent entities, including all properties and the mind visualizing this "nothing", are gone does this "nothing" become the complete-definition-of-the-situation/"the all" grouping and, therefore, an existent entity, or a "something". In other words, the very lack of all existent entities is itself what allows this new property of being "the all" grouping to appear. What this means is that "something" is necessary, or non-contingent, because even what we previously, and incorrectly, visualized as the lack of all existent entities, or "nothing", is a "something". While this is not a new idea, the current paper presents a physical mechanism for how this can be.

One objection that often comes up is that by talking about "nothing", I'm reifying, or giving existence, to it, and this is what makes "nothing" seem like "something". But, this objection is incorrect for two related reasons. First, it confuses "nothing" itself with the mind's conception of "nothing". These are two different things. This means that the mind's conception of "nothing" and, therefore, our talking about "nothing" have no effect on "nothing" itself or on whether or not "nothing" itself is an existent entity. Said another way, whether or not "nothing" itself exists is independent of our talking about it and of our having to define it as the lack of "something". Second, the objection also ignores the fact that in order to even discuss the topic, we have to talk about "nothing" as if it's a thing. It's okay to do this because, as just mentioned, our talking about it won't affect whether or not "nothing" itself actually is a thing.

Another common objection is that “nothing”, or "non-existence", is usually meant as the lack of all existent things, so how could "nothing" be an existent entity? As described above and reiterated here, the answer is that it is only once all known existent entities, including the mind visualizing this "nothing", are gone does this "nothing" become "the all" or completely-defines-the-situation grouping. That is only once all known existent entities, including the mind visualizing this, does "nothing" become an existent entity, or a “something”.
The above is the main body of the argument. The remaining sections provide additional details about the idea that a thing exists if it's a grouping, implications of this idea and comments on the physical manifestation of the surface of the existent entity previously thought of as “nothing”.

**A thing exists if it is a grouping that ties stuff together into a unit whole**

As discussed above, I suggest that a thing exists if it is a grouping. A grouping ties stuff together into a unit whole and is visually seen and physically, or mentally, present as an edge, boundary, or enclosing surface that defines what is tied together in the unit whole (although I will discuss inside-the-mind mental, or abstract, groupings below, because all the same logic applies to both outside-the-mind and inside-the-mind groupings, from this point on, I will generally discuss outside-the-mind groupings and use the terms surface, edge or boundary instead of label). To continue, this grouping, or enclosing surface, gives "substance" and existence to the thing as a new unit whole that's different than whatever is contained within. The idea of an existent entity, or object, as a grouping, oneness or unity (what is called here a unit whole) is not a new one (Laycock, 2017), but its use in answering the question "Why is there something rather than nothing?" is new, at least to the best of the author's knowledge. So, what is the rationale for this argument that a thing exists if it's a grouping? To illustrate, I use the example of a pile of dirt. Why does a pile of dirt exist? Three things that might give existence to the pile of dirt are:

1. The individual molecules of dirt and the bonds between the molecules of dirt inside the pile.
2. The surface of the pile. Note that a surface is a boundary that delimits what's in the pile from what's not in the pile.
3. Something outside the pile.

Discussing the last choice first, if the reason for existence of the pile were something, A, external to the pile, one would then have to ask why that external thing A exists? Using the same logic, it would be because of something called B external to it. Then, one would have to ask why B exists. To avoid an infinite regress, there would eventually have to be some thing that exists for reasons intrinsic, and not external, to it. Because that would be equivalent to asking the original question of why the pile of dirt exists without considering the external option, I will no longer pursue the external option. Although infinite regresses are not impossible, many, including the current author, reject them because they are neither parsimonious nor do they explain why anything at all exists in the first place (reviewed in Cameron, 2018). That is, as mentioned above, they have less explanatory power.

So, that leaves two choices for why a thing, like a pile of dirt, exists: the stuff inside the pile (e.g., the individual molecules of dirt and the bonds between them), and the surface of the pile. Evidence supporting the grouping/surface argument and against the stuff inside argument is as follows:

1. Suppose it's not the surface that gives existence to the pile but, instead, is just the stuff inside the pile; that is, the individual dirt molecules and the bonds between them. One might then ask: why does a dirt molecule exist?" The stuff-inside reasoning would say that it exists because of the stuff inside it, e.g., the atoms making up the dirt molecule and the electromagnetic forces that hold the atoms together. Then, one might ask why a dirt molecule atom or an electromagnetic force exist?" The stuff-inside reasoning would say that they exist because of the stuff inside them (e.g., the neutrons, protons, and electrons making up the atom and the photons making up the electromagnetic force between the nucleus and the electrons). Just as above, this process could obviously go on forever. At some point, to avoid an infinite regress of explaining that things exist because of smaller and smaller stuff inside and in order to have anything exist at all, there must be some smallest, most fundamental thing that exists that has absolutely no smaller components contained within. An existent entity with no smaller components inside would seem to be just a surface. That is, there's nothing inside, and it exists. What else would it be besides the surface? And, this brings us back to the idea that it's the surface, grouping or relationship defining what is contained within that causes a thing to exist and not the stuff inside. One might object and say that instead of nothing inside, there's just continuous “something”, or “substance, inside. That is possible, but then you have to explain: why does that continuous substance exist? It can't exist because of what's inside since it has no subunits. It could also exist for no reason whatsoever (it just is), which, is similar to choice A in the previous section ("something has always been here"). This is possible but doesn't explain anything. This, then, gets back again to the idea that a pile of dirt exists because it is a grouping, as represented by its surface.
2. Next, a thing like a pile of dirt is not just a bunch of dirt molecules considered individually. It's the grouping together of these individual molecules into a new unit whole called a pile. The pile is a different existent entity than the individual dirt molecules considered on their own. All the individual dirt molecules could be spread out individually over a section of land, and they wouldn't be considered a pile; they'd just be called dirt molecules on a section of land. But, group them together into a little hill, and a new unit whole called a pile is created. So, the grouping together of dirt molecules is what causes the pile to exist. A grouping together of dirt molecules is visually seen and physically present as the boundary or surface defining what dirt molecules are contained within the pile. So, once again, the boundary or surface of the pile groups together the dirt molecules and gives "substance" and existence to the pile.

Another example of this is that of a hole in a block of wood. Before a hole is cut in a block of wood, the stuff inside the future hole is just a bunch of unrelated, individual locations in the block of wood. There is nothing grouping them together into a separate unit whole. But, cutting the hole in the wood creates a surface that groups these locations together into a new unit whole called a hole. The surface, or wall, of the hole defines what locations are contained within and creates the new unit whole called the hole.

3. One might say that what makes the pile of dirt exist is all the bonds between the dirt molecules inside the pile, and because these bonds exist inside the pile, it's not the surface of the pile that makes it exist. This is a fair point, but three arguments against it are:

A. First off, a bond itself is a grouping. A bond is the connection between two or more atoms or molecules. There is no bond without the things being bonded together. So a bond is really the grouping of the two atoms or molecules along with the shared electrons or force molecules going between them.

B. Bonds between molecules might explain why a thing of many components might exist, but they don't explain why a thing that has no smaller components inside (and therefore no bonds between the components) exists. As explained above, a smallest entity with no further components inside is required to avoid an infinite regress of smaller and smaller things inside but still allow anything to exist at all. So, at this level, it can't be the bonds inside that cause a thing to exist because there is no inside. All that's left to cause the thing to exist is the surface that defines what is contained within (which in this case is "nothing").

C. It's not the bonds (between dirt molecules) considered individually that causes the pile to exist. It's the collection of all these bonds in the pile considered together. That is, it's a grouping of all the bonds together that cause the pile to exist. This grouping together of all the bonds causes a surface, or boundary, defining what bonds are contained within and that we can see and touch as the surface of the pile. So, this again supports the idea that it's the grouping, as represented by the surface, that ties together and defines what is contained within that causes a thing to exist.

4. Finally, try to imagine how a thing like a pile of dirt, or a book, could exist without an outermost edge or surface. No matter if your eyesight is so good you can see anything that exists no matter how small it is, what you're still seeing is the surface of the thing. Is a thing really there, or even visualizable, if it has no surface? I don't think so.

In sum, I propose that a thing exists if it is a grouping. A grouping ties stuff together into a unit whole and is visually seen and physically present as an edge, boundary, or enclosing surface that defines what is tied together and contained within the unit whole. This grouping, or enclosing surface, gives "substance" and existence to the thing as a new unit whole that's a different existent entity than whatever is contained within. Some additional examples of existent entities and their groupings defining what is contained within are as follows. First, consider a book. In this case, the grouping together of all the individual ink and paper atoms and the bonds between these atoms creates a new and unique existent entity called a "book", which is a different existent entity than the atoms and bonds inside considered individually. This grouping provides the surface that we see and can touch and that we call the "book". Try to imagine a book that has no surface defining what is contained within. Even if you remove the cover, the collection of pages that's left still has a surface. How do you even touch, see, or visualize something without a surface? You can't because it wouldn't exist. Additional examples are as follows. A grouping together of chalk molecules with adjacent positions on a board creates a new existent entity called a chalk circle. The grouping of molecules is visually seen as the edge of the chalk circle. A cloud exists because there is a grouping together of water molecules in the sky that we classify in our minds as a cloud. Different minds may consider different groupings of these water molecules as the cloud. Each of these groupings exist
independently in the minds of those imagining them. The actual cloud in the sky would be the grouping of those water molecules whose bonds with each other are stronger than the air currents trying to blow them apart. More on the issue of the cloud is discussed below in the section on "The problem of the many". A photon, the carrier of electromagnetic energy, is a grouping together of oscillating electric and magnetic fields, and their locations in space-time. This grouping makes the photon an existent thing that's different than the electric and magnetic fields considered on their own without this grouping. Finally, think about a set of elements. If it were unknown what elements are contained in a set, would that set exist? No. Even for the null set, it's known exactly what is contained within: the lack of all elements. The grouping defining what elements are contained within is essential for a set to exist. The grouping is visually represented by the curly braces, or surface/edge, around the elements of the set and is what gives existence to the set.

The reasoning that a thing exists if it's a grouping also applies to abstract objects. In the mind, an abstract concept labeled “love” is a grouping that ties together other ideas and concepts (“trust”, “intimacy”, memories of love-related emotions or physiological responses, etc.) into a new unit whole called the concept "love". If you remove the grouping, then you no longer have the concept called “love”, you just have a bunch of unrelated, individual ideas and concepts like “trust”, “intimacy”, etc., but they're not grouped together into a new concept labeled “love”. In general, for non-mind existent entities, the grouping defining what is contained within is equivalent to the surface of the entity. But, for existent entities in the mind, like abstract concepts, the grouping defining what is contained within is still equivalent to a surface or boundary but can be better thought of as the label the mind gives to the concept. That is, the mental label of “love” is the surface or boundary defining what other mental constructs like “trust”, “intimacy”, etc. are contained within the concept labeled “love”.

Some have questioned the role of the edge, or periphery, in defining an existent entity. For instance, Goldstick (1979) writes

“There is no more basis for identifying a hole with its periphery than for doing the same with a bump. Rather, a hole and a bump are what are contained within those spatial bounds.”

This statement is flawed for the following reason. First, of course the stuff contained within is necessary for a thing to exist (even if that stuff is "nothing" as for the null set), but it's not sufficient. Without the grouping together of that stuff into a new unit whole called a hole or a bump that is visually seen as the edge or periphery of the hole or bump, the "stuff inside" is just a bunch of individual "stuff". Goldstick's use of the phrase "what are contained within those spatial bounds" seems to say as much. Without the edge or periphery, there would be no "within" and no "spatial bounds" in the phrase "what are contained within those spatial bounds". The "within" means within the edge or periphery. Now, this edge or periphery doesn't have some magical power to give existence to stuff. But, it is the visual and physical manifestation of the grouping together of stuff into a new unit whole or existent entity. Said another way, without "those spatial bounds" defining what components are contained within, the air particles within a hole or the matter particles within a bump would be just a bunch of air or matter particles with no relationship tying them together into a new unit whole called a hole or bump. For the hole, the spatial bound is the surface/edge of the material in which the hole is located. Can you imagine a hole without its enclosing surface that defines it? I can't. For the bump, just like the pile of dirt described above, the grouping together of all the individual molecules of matter and the bonds and forces between them creates a new unit whole called the bump that's a different existent entity than the molecules and bonds inside considered individually. The visual representation, or the spatial bound, of this grouping together is the surface of the bump. Without "those spatial bounds", there would be no hole or bump to talk about.

One may argue against the materialist view and say that some abstract objects exist neither in the mind/head nor in the physical world outside the mind/head but, instead, in some sort of abstract, mind-independent Platonic realm. While this mythical realm can neither be observed nor rationally defended, even if some objects did exist in it, the reason they would exist is because they're groupings, or relationships defining what is contained within. Additionally, abstract objects are considered to be without spatiotemporal location and causal efficacy (Linnebo, 2011; Rosen, 2012) meaning that they can't cause anything to happen. So, even if abstract objects did exist in a Platonic realm, they have no bearing on our universe, which does contain spatiotemporal locations and in which things happen.

**General implications of the idea that a thing exists if it's a grouping**

A direct consequence of the idea that a thing exists if it is a grouping that ties stuff together into a unit whole and therefore defines what is contained within is that until after the grouping is complete, so that what the grouping groups together is exactly defined and the unit is whole, there is no grouping, and the thing does not exist. Only after the grouping
is complete and what is tied together within is fully defined does the grouping and, therefore the thing itself, exist. If 9 out
of 10 of the elements of a set are defined, the set still does not exist. A different set with just 9 elements could be defined as
existing, but the set with 10 elements does not yet exist. This is basically a mereological essentialism-type approach
(Chisholm, 1973; Feldman and Feldman, 2008), and it will be further discussed below. One benefit of this approach is that
one can use this idea to resolve the Russell Paradox (Granet, 2021).

Another consequence of the idea that a thing, such as a set, exists if it is a grouping that ties stuff together into a unit
whole and therefore defines what is contained within is that a thing exists only where and when its grouping defining what
is tied together exists. This grouping/existent entity can be located either inside or outside the mind. Note that by “mind”, I
mean the materialistic view of the mind as being composed of physical things contained within the physical brain, but the
following examples still apply even if the mind is an immaterial thing located in some mythical Platonic realm. What this
means is that unicorns do exist, but only in the minds of those thinking about them and not outside the mind. Also, the
mental constructs that each person labels "unicorn" are all different existent entities that exist only in those particular minds.
Another example is that of properties. Where do properties exist? Consider the example of a red apple on a table. The
physical apple and the electromagnetic wave that makes up the red light reflected from it each exist as different existent
entities outside the mind. The idea of "redness", which is usually thought of as a property of things and not a thing itself, is
actually an existent entity (e.g. a neural construct, or set of neurons, ion gradients, etc.) in the mind. "Redness" is the mind's
label that groups together other neural constructs such as the construct for the language word "red" and the constructs of the
memories and the physiological sensations felt in the past when red wavelengths of light entered the eye and were processed
by the brain. Every sighted person has his or her own neural construct called "redness". These individual "redness"
constructs are all somewhat similar, but not identical, because we all have similar, but not identical, memories, physiologies
and minds. So, even properties are existent entities that are located in the mind and are linked to other existent entities like
the neural construct called the “visual image of an apple”. By being linked, one associates the entity/property "red" with the
apple. Some feel that the property "redness" is an abstract entity that doesn't exist separately in each mind, but I would ask
where does this abstract entity exist if not outside the mind or inside the mind? Where is this Platonic realm where abstract
concepts exist? Until someone can point out where this realm exists, this is purely a faith-based argument, which while
possible, can't be argued rationally.

A third consequence of the grouping idea is that groupings that differ either in what is tied together, where the grouping
exists, or when the grouping exists are different groupings and different existent entities that are independent and distinct
from one another. For instance, seemingly identical groupings of stuff (like electrons) that exist in different places or times
are distinct and separate existent entities.

To explore this idea that a thing exists only where and when its grouping, or definition of what is contained within, is
present, consider the example of a bag, A, of ten specific grocery items. Several bag-related groupings (e.g. existent things)
can exist in several different locations including:

1. The actual physical instance of the bag of groceries, A, containing ten specific grocery items G1, G2...G10 and
located at position B and time C. Here, the bag groups together ten specific grocery items within the bag, which
means that an existent entity called bag of groceries A is present. The ten individual grocery items all exist on their
own, but the bag groups them together into a separate existent thing called bag of groceries A. The existent entities
that are the individual grocery items will be discussed more below. Note that once the bag, A, exists, if one then,
after the fact, replaces one of the items with another item, G11, this is no longer bag of grocery items A. It is a new
and distinct existent entity called bag of grocery items A1 because the stuff that is grouped together has changed.
One of the items is different, so the grouping defining what is contained within is different, so the existent entity is
different. Note also that if one removes the grocery items from the bag, the existent entity called the bag of grocery
items A at location B and time C no longer exists because the definition of what is grouped together is different.
While the bags of groceries with different items in them may be technically different existent entities according to
the definitions proposed here, in every day life, one can collapse these different entities together into one entity to
say they're all the same grocery bag. This example illustrates why the approach proposed here is basically the
same as mereological essentialism (Chisholm, 1973; Feldman and Feldman, 2008). Mereological essentialism is
the view that “if a compound thing W has a certain part P, then W cannot exist without having P as a part.”
(Feldman and Feldman, 2008). However, mereological essentialism can be collapsed to mereological
“everydayism” for use in every day life. This idea of collapse of many different existent entities into one seems
reminiscent of how one's observation collapses a quantum wave function of many different possibilities into a
single outcome.

2. The neural construct in our mind called the visual image of the particular bag of grocery items A at position B
and time C.

3. A different neural construct in our mind named the "concept of a bag of groceries". This mental construct labeled the "concept of a bag of groceries" is a grouping of all the other mental constructs associated with it such as "grocery bag" and "grocery items". By grouping these other constructs together, the mental construct called the "concept of a bag of groceries" exists on its own within the mind. As an aside, what we think of as general concepts usually have specific labels, time and location stamps removed from their component mental constructs. This is why the "concept of a bag of groceries" doesn't have the specific stamps of bag A at location B and time C associated with it.

The above three bag of grocery-related groupings are all separate existent things that exist in different locations either outside the mind or at some location within the mind. This example illustrates the point that any thing that exists exists only within a certain location or domain. For instance, some things like physical instances of bags of groceries exist only outside the mind, and some things like the "concept of a bag of groceries" exist only inside a mind. Each different mind contains its own different existent grouping called the "concept of a bag of groceries". Another example of an existent thing that only exists within the mind is that of the mental construct called the "concept of a unicorn". This grouping, or mental construct has real existence, but this real existence is only as a grouping within a mind. There is no instantiation of it outside-the-mind, as far as we know. So, whenever a thing is said to exist, it's very important to say within what location, domain or reference frame it exists and at what time it exists. As with the unicorn, a thing can exist in one reference frame but not another. A corollary of this is that the mind's conception of a thing is not the same as the thing itself. The mind's conception of a thing and the thing itself are two different existent entities that exist in different locations. The implications of this idea for the question "Why is there something rather than nothing?" were discussed above and are discussed again below.

A grouping, e.g., an existent entity, may or may not contain other existent things within it with their own groupings or edges. These internal things exist on their own because of their own groupings/edges, but where they exist is only within the confines, or domain, of the external existent thing. Using the bag of groceries example, a bag may or may not contain individually existing grocery items within it. If it does contain grocery items, then these items exist on their own because of their own groupings/edges, but the enclosing surface of the bag gives existence to the entire grouping of these things as a separate, existent whole thing called a bag of groceries. Additionally, because the groupings/edges of the individual grocery items are located inside the bag, they exist only within the confines of the paper bag. As long as they stay inside the bag, these items exist only inside the bag, and one cannot say that they exist outside the bag. If one takes out one of the items, then it exists outside the bag and no longer exists inside the bag. Indeed, if one takes out one of the items, then the original bag of groceries no longer exists either because the definition of what is contained within has changed. Instead, a new bag of groceries exists with one fewer item. While the above may all be logically consistent, in every day life, as described above, one can use "mereological everydayism" to collapse this technical difference down to just saying they're the same bag of groceries and that the items inside the bag also exist outside the bag. Taken together, a grouping, or existent entity, may contain other groupings within it, but these internal groupings/existent entities only exist within the confines of the external grouping. As described above, it's very important to say within what location, domain or reference frame a thing exists and at what time it exists.

Combining the idea that a thing, such as a set, exists if it is a grouping that ties stuff together with the related idea that a thing exists where and when its grouping is located gives the result that two seemingly identical (in appearance, properties, etc.) groupings are two different existent entities because they're separate groupings in different locations. This means, for instance, that the existent entity that is the concept of the number "one" in Joe's head is a distinct existent entity than the concept of the number "one" in Jane's head. These entities may look the same and have the same properties, but they're distinct existent entities in two different locations.

**Implications for mereology of the idea that a thing exists if it's a grouping**

Some examples of the above reasoning applied to well-known mereological (study of parts and wholes) puzzles are as follows. The solutions to these paradoxes all rely on the ideas that a thing exists where and when its grouping exists, that seemingly identical groupings in different locations or times are unique and distinct existent entities, and that the mind's conception of a thing is a different existent entity than the thing itself.

**Special composition question and unrestricted composition, or universalism:** The Special composition question, SCQ, (van Inwagen, 1987; van Inwagen, 1990) asks under which conditions some objects together compose a further object (Korman, 2014), and unrestricted composition, or universalism, says that for any objects, the collection of those objects is
always a further object. For example, if both a mosquito in Iowa and Barack Obama are existent entities, the SCQ would ask when do these together form a further object, and unrestricted composition would say always. Is this true? Using the reasoning described above, an object containing a mosquito in Iowa and Barack Obama doesn't automatically exist but could exist if a grouping of them exists. Obviously, there is no grouping of these things outside the mind, but there could be a grouping of them inside a mind if someone were to think of them grouped together. The grouping would therefore only exist in the mind of the person grouping them together. This answers the SCQ and makes the argument for restricted composition: Some objects only form a further object if there is a grouping together of them, and that subsequent object exists only when and where the grouping exists.

The problem of the many: This paradox relates to any objects whose borders are not perfectly sharp, which at the microscopic level, is basically all objects (Weatherson, 2014). It is best explained using the example of a single cloud in a clear sky. As Lewis (1993) writes:

> “Think of a cloud—just one cloud, and around it a clear blue sky. Seen from the ground, the cloud may seem to have a sharp boundary. Not so. The cloud is a swarm of water droplets. At the outskirts of the cloud, the density of the droplets falls off. Eventually they are so few and far between that we may hesitate to say that the outlying droplets are still part of the cloud at all; perhaps we might better say only that they are near the cloud. But the transition is gradual. Many surfaces are equally good candidates to be the boundary of the cloud. Therefore many aggregates of droplets, some more inclusive and some less inclusive (and some inclusive in different ways than others), are equally good candidates to be the cloud. Since they have equal claim, how can we say that the cloud is one of these aggregates rather than another? But if all of them count as clouds, then we have many clouds rather than one. And if none of them count, each one being ruled out because of the competition from the others, then we have no cloud. How is it, then, that we have just one cloud? And yet we do.”

The reasoning presented in this paper provides a resolution to this problem. Remember that a thing exists only where and when its grouping is. The grouping can be either inside the mind or outside the mind. Also, the mind's conception of a thing, like a cloud, is a different existent entity than the thing itself. Therefore, when Lewis writes:

> “Many surfaces are equally good candidates to be the boundary of the cloud. Therefore many aggregates of droplets, some more inclusive and some less inclusive (and some inclusive in different ways than others), are equally good candidates to be the cloud.”

he's right that each of these many "equally good cloud candidates" does exist, but each exists only in the minds of the individual observers. Indeed, one observer may have many different existent mental representations of the cloud in his/her mind, each with its own grouping. This is because the observer may say to him/herself: Well, the boundary of the cloud could be there, or over to the right a little bit, or over a little bit more. Inside the mind, each of these groupings would be a unique mental grouping of the cloud and therefore each would be a unique existent entity. A different observer might be thinking of totally different groupings and those would exist in his/her head. Each of these cloud constructs exists in these peoples' minds as long as their particular mental groupings exist. Outside the mind, it is suggested that only one cloud grouping exists, and that is the one dictated by natural (outside the mind) forces. By this reasoning, the cloud is the grouping that ties together those water droplets where the forces/bonds that hold these droplets together are stronger than the forces/bonds trying to drive them apart (e.g. the wind or Brownian motion). However, each observer may formulate his/her own rule for what constitutes the cloud outside the mind. This means that there is only one cloud outside the mind/head at any one time that meets a given definition of a cloud inside the mind, but until a consensus is reached, the observers cannot agree on what that one outside-the-mind cloud is. Also, using the natural forces rule, as the wind becomes stronger, the water droplets that meet the grouping definition change, and thus the composition of the cloud changes. Each cloud composition only exists for a short time as the wind changes. Overall, the issue with the problem of the many is due to confusing the many inside-the-mind/head cloud existent entities with the outside-the-mind/head cloud existent entity.

Composition as identity and the co-location of objects: Composition as identity is the idea that an existent entity containing parts is not a different existent entity above and beyond just the parts themselves. The example of a chair with a screw-on leg has been used as evidence for this idea (Wallace, 2011). The leg of such a chair seems like it is a grouping defining what is contained within and thus an existent entity. So does the chair. But, doesn't this mean that two different existent entities, the chair and the leg, are occupying the same location (e.g. that they're co-located), which seems impossible? The solution is as follows. Outside the mind, there is only one chair leg. It can exist as a subunit within the chair (similar to how a grocery item can exist as a component of a bag of groceries, see above) or as a chair leg on its own separate from the chair. But, it can't be both at the same time. That is, if you remove the chair leg from the chair, the chair containing the chair leg no longer exists (because that grouping is no longer present). So, there is no co-location of both the
chair leg and the chair-containing-the-leg. Inside the mind, the same reasoning applies. A single mental representation of
the chair leg can exist as a subunit within the mental representation of the chair or as a chair leg on its own separate from the
chair. But, the one mental representation can't be both at the same time, so there is no co-location. One can have two
mental representations of the chair leg, one on its own and one at the same time within the chair, but these are distinct
existent entities, so again there is no co-location of the same existent entity.

Dion and Theon: This is a famous puzzle first proposed by the ancient philosopher Chrysippus. As told by Wasserman
(2014):

“Dion is a normal human being and Theon is a large part of Dion consisting of everything but Dion's right foot.
Suppose now that the right foot is removed. Theon obviously survives the operation, for his parts remain
completely unchanged. But in that case it seems as if Dion does not survive the operation, for otherwise we would
have two people in the same place at the same time. Hence, Dion does not survive the loss of his foot.”

Does Dion cease to exist when his foot is amputated? Do Dion and Theon occupy the same space? Besides sounding like a
soap opera, the solution to this puzzle is similar to the solution of the above chair-leg co-location puzzle. There is only one
body-of-Dion-minus-the-foot unless you imagine a second Dion's body as a distinct existent entity, and in this case there
would be no co-location of the same body.

How does the surface of the existent entity previously called “nothing” manifest itself physically?

What exactly is a surface? We know from above that it's a grouping that ties stuff together and gives something existence,
but what does this mean in physical terms? Is it the outermost layer of what is inside? Is it the very beginning of what is
outside? Is it a combination of both? Is it some separate structure between the inside or the outside? This is a hard question
in philosophy (Varzi, 2015), and it is especially hard when you're talking about the smallest possible existent entity, which
is the entity previously known as absolute "nothing". The surface of this smallest, most fundamental of entities is the most
fundamental of surfaces. It is the "primordial" surface and is the only surface being discussed here. With this smallest
entity:

A. There is no inside because what's inside is absolute "nothing", so there are no smaller subunits or component
parts inside. This entity is a surface with "nothing" inside, so the surface can't be the outermost layer of what's
inside because "nothing" is inside.

B. The surface has no thickness because thickness implies that it's made of something, and there is "nothing" to be
made of. That is, because "nothing" is the lack of all "somethings", there are no somethings to compose the surface
Also, there's "nothing" inside that it can be made of to give it thickness.

C. There is no separate structure called a surface because the definition of "nothing" was the supposed lack-of-all,
including all surfaces. So, the surface is just the entiretyness, or the allness of "nothing".

Overall, the above says: the surface ties stuff together and gives substance and existence to the thing, but it isn't a separate
structure, there's nothing inside the surface, the surface has no thickness What's left? I think that all that's left is that the
surface is a delimiter, or barrier, to an "outside". That is, the surface must create the next-to-it, or the "outside", so it can be
a barrier beyond which that outside can't go. Said another way, the surface is really the outside the surface creates with the
surface being a barrier to that outside. While I don't think I can logically prove this, it seems to make sense because when
we think of a surface, we're usually thinking about it from the mental perspective of being outside of the entity. That is, the
surface of an object is the barrier to our entry from outside. For instance, we think of the surface of a ball, or the surface of a
floor we're standing on.

One might object and say that I can imagine a surface/barrier with nothing inside and no thickness but that still exists and
has no outside. Really? How? How can you imagine something with zero thickness? A surface/barrier with no thickness
and nothing inside is only possible to imagine if there's an outside that it's a barrier to. Another objection might be that it
just sounds too nebulous to say that the entiretyness/the allness of the "nothing" is a grouping/barrier that creates a next-to-
the-barrier. But ask this: what is the surface of a "real" thing like a book? It's a bunch of paper and ink atoms. What are the
surfaces of atoms? What are the surfaces of the electrons, quarks, etc. inside the atoms? Do you have any more idea what
the surface of a "real" thing like an electron is besides just saying it's the surface? At least, an explanation for what a surface
is (a grouping that ties things together into a unit whole, which in physical terms is a barrier and a next-to-the-barrier) is
provided here.
As discussed above, for existent entities in the mind such as the concept of a car, the grouping that creates the entity is better visualized not as a physical barrier but as a mental label such as “concept of a car” that ties together the constructs contained within such as the concept of tires, the concept of an engine, the concept of the car body, etc. However, if one wanted to, one could consider the grouping that creates the “concept of a car” as a barrier to non-car mental constructs. The next-to-it that this barrier creates is what allows the mind to view the “concept of a car” from the outside as a unit whole and unique existent entity.

In sum, the surface of the entity previously called "nothing" is the grouping of what is tied together (e.g., “nothing” which is everything/the all) and is present in the form of a surface, or barrier, that creates a next-to-it, or an outside. This surface/barrier is almost like a dimensional barrier, where inside the surface, it's absolute "nothing", but from the outside, it is a "something". Also, there's no moving between the inside and outside.

Conclusions

Taken together, the above suggests that a thing exists because it is a grouping that ties stuff together to form a new unit whole, or existent entity. For outside-the-mind groupings, the grouping is physically present and visually seen as an enclosing surface that defines this unit whole/existent entity. For inside-the-mind mental groupings, the grouping may be better thought of as the encompassing, top-level label the mind gives to the mental construct that groups together other constructs into a new unit whole. But whether inside-the-mind or outside-the-mind, a grouping defines what is tied together and contained within and gives "substance" and existence to the thing as a new unit whole that is a different existent entity than any components contained within considered individually. A corollary of this is that a thing only exists where and when its grouping exists. This can be in a mind or outside the mind. Therefore, whenever a thing is said to exist, it's very important to say within what location, domain or reference frame it exists and at what time it exists. A second corollary is that the mind's conception of an outside-the-mind existent entity and the outside-the-mind entity itself are two different existent entities. This argument for why a thing exists is then used to show that "nothing"/"non-existence", and not our mind's conception of "nothing", is a grouping and is, therefore, an existent entity. That is, what has traditionally been thought of as "nothing", or "non-existence", is, when seen from this different perspective, actually an existent entity or "something". This means that the same situation (the supposed lack of all) can appear totally different depending on the perspective of the person thinking about this. It also means that it's impossible to have a true lack of all existent entities, or "nothing", and, therefore, that "something" is necessary, or non-contingent. While this idea of an existent entity being a grouping, or a unity, is not a novel idea, to the best of the author's knowledge, its application to the question "Why is there something rather than nothing?" is.

This reasoning for why the "absolute lack-of-all" is actually an existent entity is complementary to the what's inside argument described above for why a thing exists that showed that to avoid an infinite regress of saying that a thing exists because of what's inside that thing and to still have anything exist at all, there must be some smallest, most fundamental existent entity that has an outermost surface and absolutely nothing further inside. That argument started from the assumption of an "existent" entity called a pile of dirt. The current argument starts from the assumption of the "absolute lack-of-all" or "non-existence". Both arguments come to the same conclusion but from different directions: that there is a most fundamental existent entity that is a surface with "absolutely nothing" inside.

If "non-existence" is actually an existent entity, why is so hard to visualize it as such? One reason is that our minds are "trapped on the inside" in the existent stuff that has to be gotten rid of to get "nothing". By this, I mean that our minds, which exist, wouldn't be there when there's "nothing". However, only once all things, including our minds, are gone does "nothing" become the complete-definition-of-the-situation/"the all" grouping and a new unit whole that we can then, after the fact, see from the outside as an existent entity. Of course, we can't visualize this directly, but what we can do is to try and visualize getting rid of as much as possible and then try to extrapolate to what it would be like if the mind were not there. Because of the impossibility of directly visualizing "nothing", we tend to confuse our mind’s conception of "nothing" with "nothing" itself. Because we exist, we think of "non-existence" as being dependent on and defined as the lack of what is traditionally thought to exist. But, "non-existence" itself does not have this requirement; it is independent of our mind (minds would not be present in "non-existence") and of what is traditionally thought to exist. Indeed, I believe that this confusion between the mind’s conception of "nothing" and "nothing" itself has been one of the obstacles towards people finding a solution to the question “Why is there something rather than nothing?”. This is because the confusion has caused us to make the incorrect assumption that when we get rid of all known existent entities, the resulting “nothing” is the opposite of “something”. As described here, if we could somehow see "non-existence" itself and not just our mind’s conception of it, we would see that only once all, including the mind, is gone does "non-existence" become the entirety, or
“the all” and, therefore, an existent entity.

Some fruitful discussions of these ideas have occurred online. A paraphrased excerpt is as follows. The point was made there that saying that the “lack of all existent entities”, or what is traditionally called "non-existence", is equal to the existence of another entity is a contradiction. However, as described above, it's only once all known existent entities, properties and the mind of the person visualizing this are gone, does "non-existence" completely define the situation and become the “all” grouping and therefore an existent entity. So, there is no contradiction because “the lack of all existent entities” is itself what causes the property of being the “all” grouping to appear.

Right now, if you're thinking "How can the “all” grouping be a real, physical existent thing like a surface?", remember the following. First, consider an electron. An electron is considered to be a "real", physical particle. But, what is an electron? What is inside an election and what is the surface of an electron that defines what is contained within and that makes it real and physical? No one knows. All we really know is that an electron is an existent entity. As such, it is really no different than the existent entity that has been previously referred to as "nothing". An existent entity is an existent entity. Whether or not this state is called an "electron" or "the all grouping that is what we previously called nothing" doesn't matter. Second, two groupings or two existent entities that were previously referred to as "nothing" and that are “looking at each other” would look as real to each other as two "real" existent entities called "electrons". It's all relative.

Changing to a broader, or more spiritual, point of view, one might use the proposed solution to the question “Why is there something rather than nothing?” to say that if one could pull back the curtain and see what's really at the base of reality, one would find "nothing" at all. That sounds not so good. But, remember, this "nothing" is, when seen from a different perspective, a “something”, or existent entity. The somewhat similar view that “nothing” and “something” are complementary has long roots in Indian (Bhattacharyya, 2021) and Chinese (Chen, 1969) philosophy. For example, Chen (1969) describes the idea of “wu (non-being) and yu (being)” in the Tao Te Ching text of Chinese philosophy, with wu giving rise to yu. More recently, Bhattacharyya (2021) has expanded on this philosophical history as well as on the mathematical concept of zero to reach a similar conclusion as in this paper when he says “Finally, we argue that nonexistence may notionally constitute existence, and hence may be the fundamental.” While his rationale is different and more mathematical, Bhattacharyya covers some of the same ideas presented in this paper. Despite this long history of “nothing” and “something”, to the best of the author’s knowledge, the current paper is the only one that presents a physical mechanism for how “nothing” can be a “something” and, in fact, the most fundamental, or primordial, of “somethings”.

What is this proposed solution to the question "Why is there something rather than nothing?" good for? Like all such solutions, one can never prove the above hypothesis because one can never actually directly see whether the supposed “absolute nothing” is itself an existent entity. But, what we can do is as follows. Because there is nothing smaller than "nothing", the existent entity formerly called "non-existence" would be the smallest and most fundamental of existent entities and, as such, would be the fundamental building block of existence. Because the universe exists and has physical properties, this most fundamental of existent entities must therefore be the most basic building block of our existent universe and must have physical properties from which the physical properties of the universe are derived. So, we can try to figure out what the properties of the “primordial” existent entity previously called “nothing are and use them to develop a simple model of our existent universe. If this model matches observations and can make testable predictions that are validated by observation, this provides evidence for the above solution. This is the scientific method. I refer to this as a metaphysics-to-physics approach or philosophical engineering and think it is a way to turn metaphysics into a more science-like field. Without evidence from a model that people can see and use, we’ll argue and argue about the subject forever without ever coming to any consensus. Obtaining evidence is the only way we’ll be able to move forward. The author is currently working, very slowly, on building such a model. What this metaphysics-to-physics approach also means is that by discussing the question "Why is there something rather than nothing?, we are actually discussing fundamental physics. Somewhat similar ideas have been proposed by Tegmark (2008) and Rickles (2010).

Finally, philosophers may criticize this paper because it has little discussion of the history, philosophical context or philosophical meaning of the question "Why is there something rather than nothing?". But, I am not a philosopher, so my goal is to try to answer the question, not just talk about it, and then use that proposed answer to make progress in physics. I think this should be the aim of all thinkers in this area instead of just talking about the question itself.

Further details can be found at: https://sites.google.com/site/ralphthewebsite
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