

# Material Constitution

**1. The Puzzle:** Consider this statue of a unicorn:



Philosophers often claim that this is a photo of TWO objects not one. They are:

- (1) The statue
- (2) The lump of clay

Think about it. These 2 objects must be different because they have different properties:

- The lump of clay existed before the statue did.
- I can destroy the statue (e.g., by squashing it) without destroying the lump of clay.

Given these observations, the lump of clay must be a different thing than the statue, since the clay seems to have properties that the statue does not (i.e., existing before the statue did, and being able to survive a squashing). Thus, there are TWO objects in the photo above. But, then, there exist two objects that are made up of the same matter, arranged in the same way, which are co-located in the same place at the same time.

...That's impossible, though. Isn't it?

There is a puzzle here. It is generated by the following four assumptions, all of which seem to be true:

- (1) **Creation:** The sculptor really does create the statue—that is, the statue did not exist before the sculptor sculpted it.
- (2) **Survival:** The sculptor does not destroy the lump of clay by forming it into a statue. The lump of clay continues to exist.
- (3) **Existence:** There really are such things as statues and lumps of clay.
- (4) **Absurdity:** It is impossible for two different objects to share the same matter and spatial location at a single time.

**2. Four Solutions:** At least one of these 4 claims must be false. So, which one is it? Unsurprisingly, various philosophers have rejected each of them. Let's take a look.

(1) **Reject Creation:** A sculptor doesn't create a statue. They merely give a lump of clay some different shape. It goes from lumpy-shaped to statue-shaped. There are no such things as statues. All that exists are hunks of matter.

One suggestion is that merely bending, stretching, shaping, etc. does not bring a new object into existence. For instance, if I wadded a piece of paper up into a ball to throw it into the trash bin, plausibly I did not create a new object (a ball). Rather, there is just one single object both before and after the wadding: Namely, the paper with a flat shape, and then the paper with a wrinkled, wadded up shape.

We might say the same thing about the clay statue: Sculptors do not bring some NEW object into existence when they sculpt. Rather, they only give a new form, or shape, to something that was already there. So, there is just one single object both before and after the sculpting: Namely, the lump of clay with an amorphous blob shape, and then the lump of clay with a unicorn shape.

Sider calls this solution **The Just Matter Theory**. What it says is that there are no such things as statues, or cans, or bottles, or chairs—just hunks (or collections) of matter. Hunks of matter can be arranged in unicorn-shapes, or can-shapes, or bottle-shapes, or chair-shapes. But, they are always just hunks of matter.

Criticisms: First, this is counter to the way we ordinarily speak. Imagine turning to someone in your art class on sculpture day. You'd probably say, "Look at this statue I made", not "Look at this lump of clay I re-shaped". We take it that we MAKE statues. Factories MAKE bottles. Carpenters MAKE chairs and tables.

But, it is much worse than that: Second, if objects are merely collections of matter, then dismantled objects still exist even after they are dismantled. A car stripped down and sold for scrap metal still exists because that sum of matter still exists. Sure, we would not call it a CAR because that collection of matter is no longer CAR-SHAPED, but still, that collection of matter still exists, scattered.

(Think of ordinary objects on the Just Matter Theory as mere collections of smaller objects. There are some objects we think of this way; e.g., a deck of cards. The object that we call a "deck" is merely a collection of 52 cards. If we scatter that collection across the room, surely the collection continues to exist. Now, let's play some 52 Pick-Up.)

But, it seems odd to think of ALL objects in this way. For, in that case, every car sold for scrap metal still exists, every tree that was ever chopped apart for firewood, and every person who has died and returned to the soil (since all of these collections of matter still exist)—only we'd no longer *call* them cars, trees, and people.

Third, collections are individuated like SETS. But, a set ceases to exist if a single member is lost or replaced. For instance, these two sets are not identical:

{1, 2, 3, 4}      {1, 2, 3, 5}

But, then, if the statue is merely a collection of matter arranged in a unicorn shape, then it seems as if I can destroy the statue just by removing a single atom (for, now it is a DIFFERENT collection of matter arranged in a unicorn shape). In short, the Just Matter proposal seems to be committed to the following counter-intuitive view:

*Mereological Essentialism:* Every object necessarily has all and only exactly the parts that it does (i.e., no object can survive the loss of, addition of, or replacement of, a single part).

Fourth, since collections of matter are just sets, proposal (1) must admit that ANY collection is a set, and therefore a THING. [*We will talk about this view next time.*]

(2) **Reject Survival:** Once the lump of clay is re-arranged into a statue shape, it ceases being a lump and starts being a statue.

When we look at the unicorn statue, most people will say that they are looking at ONE object. What object? Why, a statue, of course.

Or, when we look at a car, we intuitively say that there is ONE object before us: A car!

To avoid claiming that there are two objects existing in the same place at the same time, solution (1) denied that the statue ever comes into existence. Solution (2) denies that the lump of clay continues to exist.

Perhaps a statue is NOT a lump of clay anymore; and perhaps a car is NOT a hunk of metal anymore. Those things have gone out of existence. They've been replaced. Sculpting CHANGES the lump of clay into something else; something new (a statue). An auto manufacturer CHANGES the hunk of metal into something else (a car).

In short, sculpting involves a transformation. The sculptor takes a mere lump of clay (or marble, or whatever) and TRANSFORMS it... No, not a mere transformation. Consider a caterpillar "transforming" into a butterfly. Intuitively, it is the same thing with a new form. That sounds more like suggestion (1). No, the suggestion here is that the old thing has ENTIRELY CEASED TO EXIST! So, sculpting involves a REPLACEMENT!

Put simply: The lump of clay ceases to exist as the sculpture begins to be. (Think of it this way: When someone dies, the person ceases to exist and at that very moment a corpse begins to be). So, the statue and the lump of clay never exist in the same place at the same time. First there is the lump of clay. Then there is the statue. Sider calls this **The Takeover Theory**.

Criticisms: First, it seems weird to think that we can destroy a lump of clay just by changing its shape. Imagine a magician claiming, "Watch me destroy this lump of clay! Before your very eyes, the lump of clay will CEASE TO BE!!!" ...And then he just rolls it into a ball.

Second, The Takeover Theory distinguishes between one entity and the next by what SORT it is. Originally, the material is of the sort *lump of clay*. But, after the sculptors work, it is of the sort *statue*. But, what "sorts" of things are there? Are "sorts" objectively in the world, or are they subjective? If subjective, they could be totally arbitrary. Maybe we destroy an "outpiece" by taking it indoors (so that it becomes an "inpiece").

Finally, a problem of vagueness creeps in here. For instance: How many smudges can I make in a clay statue before it is destroyed and becomes a lump of clay? Surely, one smudge does not make the statue cease to exist. But, if I continue to smudge the soft clay of the statue, at SOME point the statue is replaced by a lump of clay. At what point does this happen? There seems to be no definite answer.

(3) **Reject Existence:** Neither lumps of clay nor statues exist. Nothing except the most basic fundamental particles exist. Even protons do not exist, since they too are composed of even smaller, more fundamental particles.

Perhaps the only real material objects in the universe are the fundamental particles. Sure, those particles can be ARRANGED statue-wise, or table-wise, or tree-wise; but, those things are not really THINGS. There are only particles.

This is not VERY counter-intuitive. When you look at a "table", surely you would agree that you are looking at billions, or trillions of particles. But, what makes you think that there is ALSO something else that you are looking at? Why must there, in addition to those particles, ALSO be an object that is a TABLE? Sider calls this view **Nihilism**.

Criticisms: This proposal would be pretty revisionary, since it leads to the conclusion that there are no macro-sized objects (i.e., no larger objects composed of tiny, fundamental particles). There are no visible objects at all in fact...

Second, what if there *is* no smallest, indivisible, partless, "simple" entity? Scientists once thought that atoms were indivisible—the smallest, most fundamental material things in existence. But, then we discovered protons, neutrons, and electrons. Later, we discovered that even THESE were composed of still smaller particles (quarks). What if it is just smaller parts ALL THE WAY DOWN? Then there ARE NO smallest particles. But, then, NOTHING EXISTS!?! That would be incoherent.

(4) **Reject Absurdity:** Maybe 2 objects in one place isn't so crazy.

Perhaps we are driven to the conclusion that there ARE in fact two objects co-located where the unicorn statue is. Sider calls this view **Cohabitation**.

Criticisms: Is Cohabitation committed to the claim that there can be objects, X and Y, where X and Y are composed of all and only exactly the same parts, arranged in exactly the same way, and yet  $X \neq Y$ ? i.e., X and Y are numerically distinct objects? If so, that seems absurd. We might reply that X and Y are distinct because they have different *properties*—for instance, the clay is less fragile than the statue, since it can survive a squashing while the statue cannot—but how can two objects have different properties if they are composed of exactly the same matter, arranged in the same way, and are co-located in exactly the same time and place??

**Summary:** Regarding the photo of the of the unicorn statue, we might ask: How many objects am I looking at? The answers have been as follows:

- (a) The Just Matter Theory: One (the lump of clay).
- (b) The Takeover Theory: One (the statue).
- (c) Nihilism: Trillions (of subatomic particles; but neither a statue nor a lump of clay).
- (d) Cohabitation: Two (the statue and the lump of clay).

This is truly puzzling, for each of these views entails something counter-intuitive.

*[Note: We will examine Sider's solution next week. Hint: Perhaps (d) is NOT committed to the claim that the statue and the clay are composed of exactly the same parts.]*