

The Ship of Theseus—An attempt to solve it - Brain Juice - Quora

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The Ship of Theseus—Paradox 1



image source

Theseus has just bought himself a brand new wooden ship. He is a maintenance fanatic. Whenever some part of his ship gets a mark on it, he removes the part and replaces it with a new duplicate. Over many years, Theseus has eventually replaced every single original part with new wood. He is proud of how well he has kept up the condition of his ship.

Xanthippe buys used ship parts for refurbishing and resale. Theseus has been a source of high quality material. Xanthippe has bought from him each part of his ship as he replaced them. As it happens, Xanthippe has not sold any of them. She realizes that she now has the parts of a whole wooden ship, and they all have just minor cosmetic flaws. Xanthippe cleans of the marks on the wood and re-assembles the parts into a ship, placing them back in their exact original arrangement.

- Does Theseus still own the ship that he purchased?
- If so, how does the ship that he purchased differ from the ship that Xanthippe now has?
- If not, when did Theseus stop owning the ship that he purchased?

Typos in the puzzle

Please note that the puzzle has some minor typos which can confuse some readers. Therefore I would like to point out that I made some minor changes.

- **Change of typo 1**
She realizes that *the* now has the parts of a whole wooden ship.

- The word *the* changed to *she*.
 - She realizes that **she** now has the parts of a whole wooden ship.
 - **Change of typo 2**
If so, how does the ship that he purchased differ from the ship that *Zanthippe* now has?
 - The word *Zanthippe* changed to *Xanthippe*.
 - If so, how does the ship that he purchased differ from the ship that **Xanthippe** now has?
-

Foreword

I do not claim to have cracked the code of the metaphysics of identity, I only claim to have solved this specific puzzle that has *something* to do with identity. Therefore, please note that I'm trying to answer this puzzle in the way it was originally presented to me. Thus it would be dishonest for someone to point out that, that is not what is meant with a certain word or sentence. If otherwise was meant, then the originator's puzzle should have indicated so. I have concluded that Theseus still owns the ship he purchased. The key to answering this puzzle lies in Theseus his ability to *somehow* gain duplicates of the parts of his ship. Furthermore, I will be discussing what it means for something to be a duplicate and the limitations of something being a duplicate. Another important point will be how we look at this object i.e. the ship. Do we see the ship as a world unto itself or as an object in a world, or both? This ties in to the limitation of the concept of a duplicate. We will also have to establish if the way the ship has been assembled influences the identity of the ship.

Assembly and identity of the ship

We have to ask our selves does the manner in which the ship has being assembled influence the end result i.e. the ship? The answer is simply no. The assembly does not influence the end result of the identity i.e. ship. Therefore, the manner in which the ship has been assembled is irrelevant. The assembly is simply not an inherent property of the ship. Only if the assembly did influence the end result of the ship, it would be a relevant property. For instance, Xanthippe could have made some minor changes that would allow the ship to be slightly faster or more maneuverable.

Xanthippe cleans of the marks on the wood and re-assembles the parts into a ship, placing them back in their **exact original arrangement**.

The puzzle states that we speak of an identical arrangement. In fact for this paradox to work, it would be required that each time the ship gets assembled in the exact same arrangement.

Whenever some part of his ship gets a mark on it, he removes the part and replaces it with a new duplicate.

The puzzle states that Theseus simply *removes* and *replaces* the part with a new *duplicate*. The puzzle does not state that Theseus changed his technique of assembling resulting in new properties of his ship, and therefore resulting in a new ship. For instance, if the [mainmast](#) got a mark on it and Theseus decided to replace the mainmast in its original position, except 1 millimeter of the original place. Resulting in the ship being microscopically affected in such a way, that it now has slightly better maneuverability. If this would be the case, then one would impulsively be inclined to assert, that we do not speak of the exact same ship anymore. However, this is simply not the case. If this would be the case than we do not speak of replacement anymore, but of adjustment.

To go a step further, lets try to participate in a thought experiment.

There are two groups of ship builders. A group of leprechauns and a group robots. Both groups have the ability to assemble the ship in the exact same manner, that is to say, they both have the ability to create the exact same end result. However, their way of assembling is different.

For instance, the tools which the leprechauns and the robots use could be significantly different.

These two groups have both the assignment of assembling the ship. However, we cannot see how they do this. Because we are going to put both teams in two separate giant boxes. So, we are starring at two giant boxes.

After some time, we lift up the boxes, and what we see are two identical ships in every way *possible*.

Therefore, the manner in which the ships have been assembled in, did not—in this case— influence the identity of the ship. As an onlooker, you could say that the manner in which the ships have been assembled in, is part of the identity of the ships, therefore the ships are not genuinely identical. However, this is because you are an on looker, that is to say, that you have the knowledge of these two ships being assembled in a different manner. Without this knowledge, when the two boxes are being lift up, thus revealing the two ships at the same time. You could not distinguish these two ships. You would be absolutely ignorant to the fact, that one ship was made by leprechauns and one by robots. Only if the assembling did influence the end result, would you be able to spot a microscopic difference. The way the ship(s) have been constructed, is simply a black box for us, the onlookers,

and therefore not a relevant part of the identity of the object we call Theseus's ship. It might seem like I'm going overboard with this part, however if this would not be the case, then my whole theory would not work. My theory can only work, if we assume that the way in which the ship has been assembled in, does not influence the end result we call Theseus's ship.

The idea of a duplicate

We have to ask our selves, is the concept of a duplicate a tangible concept? That is to say, is it really possible to have a duplicate of an object? If not, why? If yes, how?

- **Definition of Duplicate**

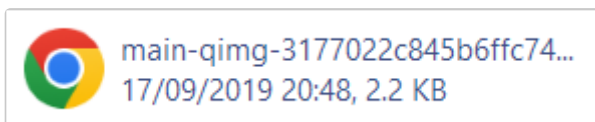
Exactly like something else, especially through having been copied.

It is simply redundant to use the term *exact duplicate*, since the term duplicate implies it.

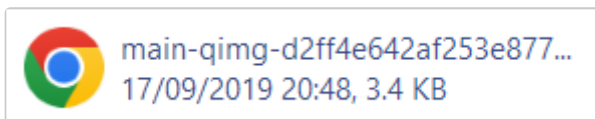
This definition or phrased differently the concept of a duplicate is flawed. It is absolutely impossible to have an exact same duplicate of anything. At least, not in our current reality. I will illustrate this in a moment. First, I have to point out, that the universe in which the puzzle resides in, does allow for the idea of a duplicate to be tangible.

I will first explain why a duplicate is simply not possible in our world, and why a duplicate is possible in the world of the puzzle. But, more importantly, I will try to uncover the true essence of a duplicate, and what it really means.

Lets do it. Lets duplicate something. Lets see what happens. I'm going to use a rendering software that allows me to play around with objects and duplicate them. We will duplicate the object you see bellow in the image. The object is a hibernation pod from a [sci-fi environment](#) , I made a long time ago. However, what the object is; is absolutely not relevant to make my point. So, don't get hung up on this. You can regard the dark background as space.



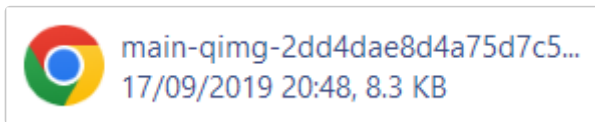
Lets duplicate it now.



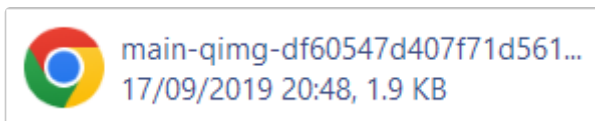
Because of the camera we get some distortion on how we perceive the two identical objects, but I can assure you, they are exactly the same. See, the neat thing about

computers, is that it allows us to create perfect duplicates, with the single push of a button. Or does it?

Yes, these two objects are identical in their form, in fact they are so identical, that you could never distinguish the original and the duplicate. However there is one variable that does not allow these two objects to be identical of each other. Have you noticed this yet? Exactly, it is their position in same space. This variable, simply does not allow for the concept of a duplicate to be tangible, even in a virtual reality. See, for yourself bellow, the original object is left, the duplicate is right.



They are exactly the same except for their location in space —virtual space. As you can see the duplicate on the right has moved 880.8 units on the x axis. In fact, this is the only way, you can get a duplicate —in the sense to what people usually refer to— when they speak of a duplicate. So, what will happen if we try to make an **exact** duplicate of something —in this case our virtual object— including the location in space. Well, we are in luck! Because virtual reality allows us to do this. Brace yourself, you are about to witness a genuine duplicate which is 100% identical to the original object! In fact, let's go nuts, let's create 1000 duplicates.



Here you go 1000 duplicates of the exact same object — **including its position in space!** As you can see this concept is not even tangible in virtual reality. It is simply impossible to get a duplicate of anything in our world or phrased differently to perceive it. For all we know, you could consist of 10,000 duplicates of yourself, doing the exact same thing in space and time at this very moment. However, this is just a language game, there is absolutely no reason to believe that this is happening right now. If you think otherwise, feel free to comment. The whole point is, that a duplicate is synonymous with the original. It is always the original, you simply cannot get a duplicate of the original. If you do, like I did in my software, it is simply not possible to perceive it, and therefore distinguish the original and a duplicate — it simply is.

The only possible way to get a duplicate is in a different kind of reality, similar to that of the puzzle. For this to work, the reality has to allow an original object to go in and out of existence. Remember duplicate is synonymous with original! For instance, we start with an original object, a brick. All properties of this brick makes this brick the original, including its location! Now, someone picks up this brick and walks away. The simple act of the brick being removed from its original location has

walks away. The simple act of the brick being removed from its original location has given the brick new properties. The property of being in a different location in space. The point is, we do not speak of the original anymore, because a property of the object has changed. However, because of this change, it allows us to create a genuine duplicate. The reason we can do this, is because the space the other brick occupied is free now. We do this by *somehow* making the brick reappear in the exact same location. We did not only create a *duplicate*, we simply returned the object to its *original* state. That is the true original! Because it has all of its properties still intact — including its location in space. In fact, we could say the other brick is a fake, it is, the moment the brick got lift up it became something different then it originally was. Perhaps, Heraclitus said it best: “*You cannot step in the same river twice*”.

Because we have established that it is simply not possible to have multiple identical objects in reality at the same time — with the ability to distinguish between these two objects. Therefore, like discussed before, what only remains is, the object going in and out of existence. It is either the original or not. It is either there or not. ***If it is not there, then it is not a duplicate, and if it is there, it is the original.***

Another extremely important thing to point out is, that the location in space of an object only becomes a relevant property, when we talk about duplicating objects in the imaginary manner I described. If it is not possible for an original object to go in and out of existence, then the property of location in space is an inherent property of the object that simply changes its variable. In the same manner that hair has the property of changing its shape. Only if it is required to make a duplicate of a specific hair strand, the shape and the location in space of the hair becomes relevant. I will elaborate more on this further down the line.

It is simply irrelevant to discuss whether the location in space, is or should be, an important factor when deciding what constitutes of an identity. The simple fact that the concept of a duplicate is being used in the puzzle, makes the discussion irrelevant. Because, the concept of a duplicate *a priori* requires something to have the exact same properties, including its location in space.

The ship as a world

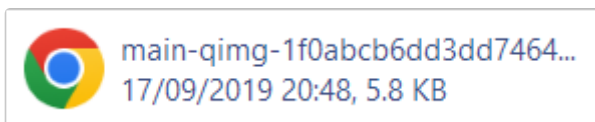
Is the ship a world unto it self or an object in a world, or both? The answer is both. The *entirety* of the ship is an object in the world. However the ship it self is also a world that consists of objects.

While the location in space of the entire ship changes relative to the world it exists in, the locations of the objects residing in the world —we called ship— do not change relative to their world i.e. the ship. Meaning that the separate objects which create

the entirety of the ship, have their own separate world called ship, while the entire ship is one single object having its own separate world— in this case the world can be simply referred to as planet earth. Another way to look at this is, the *entirety* of the ship is the space that the separate parts/objects creating the ship reside in. Planet earth therefore is the space where the entirety of the ship —as a single object — resides in. Thus the ship is also a part of planet earth and a part that creates the singular object we call planet earth. If we want to go further with this, then space is the world in which the object planet earth resides in. You could also argue that the solar system is, the galaxy and so on, but it doesn't really matter, since I have made my point. So, while the *entirety* of the ship can change its location, it can only do so relative to a location in the world it resides in i.e. planet earth! Point is, location can only be pinpointed if it is relative to something. To illustrate this:

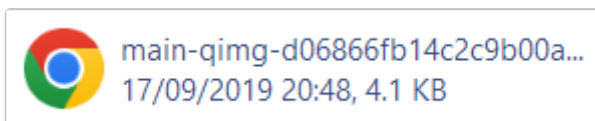


The entire scene constructed out of white shapes can be seen as an singular object residing in the blue world. However, the entire scene can also be seen as a separate world where the smaller white shapes resides in.

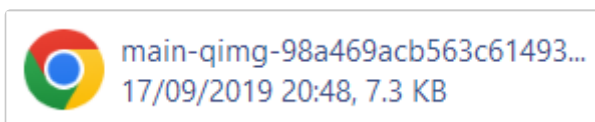


I have now moved the location of an object residing in the white world, the reason we can deduce that the object has been moved in the white world is, because it has been moved relative to other objects in the white world.

If I move the entire scene like this:



We have now moved a singular object relative to the blue world. This is the only reason why it is possible for us to assert that something has been moved. The reason is because it has been moved relative to another object or in this case the blue world. However, the blue world —together with the white world— are also two objects in the red world. The most important point of all, is that the objects residing in the white world have not changed location relative to its world! In fact this is not even observable, because If I cut out the blue and red world from the camera, resulting in only seeing the white world, everything would be in its exact same position:



Therefore, we can conclude that the location of an object can only be asserted relative to other objects in the world it resides in. The objects can also be the buildings blocks that allow a world to exist.

Thus:

- A part from the ship is a singular object residing in the world called ship, and has its own specific location relative to other objects residing in the world called ship.
- The entire ship is a singular object residing in the world called earth, and has its own specific location relative to other objects residing in the world called earth.
- The entire earth is a singular object residing in the world called solar system, and has its own specific location relative to other objects residing in the world called solar system.
- And so on.

As you can see the ship is an object in the world earth, but also a part that constitutes the object earth. In the same way earth is an object of the world solar system, but also a part that constitutes the object solar system.

This is an important point, because this allows us to see the location of the ship in its entirety as an inherent property of the ship as a singular object, which has the inherent property of changing location. The entire ship does not require to be respawned as a duplicate, thus there is no need to have an entire ship be respawned in its exact location, because the property of the ship is simply a ship that can move. Only small parts of the ship get respawned, this is also the place where location in space does matter when we talk about exact duplicates.

Conclusion

Taking all of this into account, the ship of Theseus is the exact same ship. The ship of Xanthippe differs in that the parts it has been constructed with are not original parts anymore, they are simply parts that have been marked. The original ship never got any marks on it nor where marks removed by Theseus, he simply removed a whole part of the ship rather than only the mark. The way in which he did this is by somehow gaining duplicate parts of his former ship. If you look at this as a whole, that is at Theseus repeatedly replacing parts that are not original anymore —because of the mark(s)— by parts that are original i.e. duplicate. You could in essence say that the ship has the property to restore it self to its initial condition it was in when Theseus bought the ship.

Another way in which Xanthippe ship differs from Theseus ship is that the ship of Xanthippe never started to move from the same location. While Theseus's ship is the original one which is still sailing, while Xanthippe's ship is simply a copy of Theseus ship, that has just started to sail.

Like discussed before, Xanthippe's ship is not constructed out of genuine duplicate parts. The moment a part got a mark on it, it has ceased to be the original part. Thus, we can say that the original part has ceased to exist. It doesn't matter if Xanthippe can remove or cover up the mark, the moment Xanthippe starts to influence the part, it has again ceased to be the original part, because of the microscopic changes. If you do this with all the ship parts — especially since a ship has a lot of parts— all the microscopic changes on all the parts will eventually influence something in the ship, for instance the ship floating 1 millimeter above the water compared to the ship of Theseus.

However for some magical reason, Theseus has the ability to gain new original parts! Or was it duplicates? Both! Remember original and duplicate is the same. Suppose Theseus gains a duplicate part which is exactly constructed in the same manner as the original, even down to the last molecule and atom. The only thing which stops the duplicate from being the original is its location. Therefore, Theseus has to first assemble the duplicate in the exact same place on the ship the previous marked part was on. Only then the duplicate becomes an original. Because, now the part is not only constructed in the exact same manner, but *is* also in the exact same position, relative to the other parts in the world called ship! It does not matter if the ship in its *entirety* has changed location. Because the ship part is a part of the world called ship and not a part in the world called earth relative to the entire ship.

We can then conclude that Theseus ship is always in its original form, and every time it is not, Theseus makes sure it is. Yes, the ship of Theseus temporarily becomes a non-original, that is, everytime it gets a mark on. However, Theseus has the magical power of somehow every time get an exact duplicate of the part its original condition. In essence, Theseus just keeps resetting his ship to its original condition, one could argue that by doing this Theseus is sending parts of his ship one by one back in time, and therefore, back in their original condition.