

The Mobile Phone *is* a Teleportation Device

A thought by Joost Broekens

No, I'm not a lunatic and no I'm not suggesting you can fly through space using your mobile phone. What I'm suggesting is that what we do with our mobile phone strongly resembles what teleportation is, although at a very low level of fidelity. I will explain in this short article why I think this makes sense.

Teleportation literally means moving over a distance. Typically, what is meant though is moving over a distance without having to cross the space between the start and end point. Movement involves going from one place to another and not leaving your body at the start. Therefore, teleportation usually involves deconstructing the body at the start location (because we can't think of another way of moving without occupying space).

The way to do this is often described as an atom by atom reconstruction of a copy of the original body after which the original is destroyed. Of course the original could be kept, in which case it is called cloning (in the science fiction sense, not the biological sense of course).

What I will argue here is that, assuming that we drop the "destruction of the original" part in the definition of teleportation, for all practical purposes mobile phones allow us to teleport ourselves at the speed of light (or, to be more precise, at nearly the speed of light).

I will explain this with a thought experiment, although one that is actually possible. But first I have to explain a little more about the "subjective functionality of teleportation". By this I mean the things that a human would perceive to be possible after a teleportation event. In summary, this function is precisely the following. Teleportation allows you to sense and manipulate the world around you at a different location than you were previously, without you having to first cross the space that bridges the two locations. So, from a subjective point of view (or you might say a Matrix® point of view), teleportation is the ability to interact with the world at a distance. It doesn't really matter, from a perceptual point of view, whether you actually cross that distance or you only seem to cross that distance. Especially if we assume the perception of the interaction with the world at a distance is of such high fidelity that you as an observer cannot tell the difference.

Why are these last two observations so important? First, approaching teleportation from a functional point of view decouples it from mechanisms - that might or might not be possible - that would enable us to actually move or reconstruct a semi-structured blob of atoms (your body). Second, if you really can't tell the difference between interacting at a distance versus interacting locally, then for all practical purposes you have effectively been teleported (compare this with the Turing test in computer science). Together, these observations result in the following conclusion: as long as you can simulate interaction with a world at a distance such that you believe to be there, this can be considered teleportation.

Now we move to the thought experiment. Imagine you are blind, lame (except your right hand), you cannot feel temperature and you have lost the sense of touch and smell. Luckily most people do not lose that many senses at one time, but this is a thought experiment. This means you are dependent on your

hearing ability as well as your voice to interact with the world. This is very well possible of course: blind people use sound to build up visual maps of the world around them and they can obviously talk to others around them too. Now suppose that you are somewhere in New York. You hear cars, people passing by, perhaps an airplane from time to time. When you talk, people react. As you command your wheelchair, cars stop for you etc. You interact with the world. Suppose you have a very sophisticated mobile phone. It has two earplugs that pop out sound with surround fidelity. It has a directional sensor that senses the direction of your head. You also have a spare wheelchair in a rural area in France. Now, you phone your wheelchair, and as soon as the chair picks up the phone, you hear the sound (in nice surround fidelity) of rural France. You hear birds, livestock, a tractor, you name it. When you command your wheelchair to turn around, the command is sent through the phone line and you hear the sound of the chair on the gravel road. While driving, you hear the sound of your wheels echoing from trees at the side of the road. Suddenly, you hear a farmer mumbling in your right ear. You answer that everything is fine, and that you enjoy the trip. The Frenchman is audibly surprised (he probably did not expect the wheelchair to talk), but when you explain the deal, he offers to take you on a site seeing (or rather site hearing) trip.

This whole scenario is completely plausible, and it is possible right now. The question is, do you honestly think you are in France? Probably not, because you know you called your French wheelchair. However, if the wheelchair would have called you, and your phone automatically answers, and you were born like this, there is no way to decide whether or not you actually teleported to France. Except if you know that teleportation is not "true" and deduce that what has just happened would fall under the classification of teleportation. But if no one tells you that, for all practical purposes you can teleport yourself.

Ok, you might follow me up until this point, but I promised that I would explain why I think we already use our phones as teleportation devices, but we just don't consider them as such. When I'm in a supermarket, and I forget my grocery list, ... ET phones home. At the moment my girlfriend answers the phone, I am already interacting with the world at a distance that I did not have to physically cross. I and my girlfriend can now jointly solve my grocery problem, and we can do this even if I am on the other side of the globe. Actually, what happens is that the world around my girlfriend's phone (including my girlfriend) gets squeezed into a narrow bandwidth electrical and optical representation that gets "teleported" to my phone, after which it is rendered to its original form. So what we actually do with mobile phones is teleporting surroundings at the speed of light, with the teleportation medium being radio waves and optical signals. Of course, not many people would argue that this is real teleportation, but I think it is. It is just as real as the blind, lame American wheelchair user being teleported to France. The only difference is that the fidelity is much lower (partly because you and I are accustomed to sight, sense, etc.).

Now, since when was teleportation a matter of getting to the required level of fidelity? I would argue it has always been, but we just didn't consider it to be so. In popular thought on teleportation we think of one particular mechanism for teleportation: scanning and reconstruction of our own body. To get to the required level of fidelity to do *that* is just plain ridiculous. However, scanning and reconstruction of our surroundings is by far more efficient as we only need to fool our senses. As our thought experiment shows, this is not even very far fetched and as hard as it might seem. So... beam me to France Scotty!