

What is real?

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The following essay was originally posted on the Rational Skepticism Internet forum as a comment (<http://www.rationalskepticism.org/post881925.html#p881925>), but I have decided to post it on my own website as well. It concerns the idea that some people have that we, or the everyday world, may not be “real” if one of various scenarios applied – such as being in a computer simulation.

Before I start here, I will be clear that I am not arguing for either the idea that the everyday world is a computer simulation, or the holographic universe idea – two ideas which I will discuss merely as examples of scenarios in which some people might question our status, or the status of the everyday world as “real”.

I have issues with the idea that if we find out that our perceptions are explained in some "strange" way, such as that we are actually software running in some alien supercomputer, or a supercomputer built by 30th century humans, etc. – then that means that our existence is an "illusion". What it is about this that would make it an illusion? There would be the apparent, everyday world that we experience, and underlying that apparent world would be a description of reality in terms of switches turning on or off, electrons or photons moving around, etc. – whatever this computer is doing. When I have the perception of going to buy a newspaper, I would know that the real explanation is that this switch turns on, and that switch turns off, etc. – and even my thoughts would map onto some kind of description of what is going on inside this machine. But how is that profoundly different from how we already regard things? I already know that my experience of going to buy a newspaper is the experience of an apparent world explained in terms of chemistry, particle physics, quantum mechanics, etc. Whether I am in a computer simulation or not, there is an underlying description – an explanation - of the world in which I live which looks nothing like that world – and from which the everyday world is abstracted.

Intentionality

I suggest that a lot of people would say that a computer-simulated world would be an "illusion" partly because we are used to thinking in terms of intentionality behind the appearance of something meaning that it is "fake": we are used to thinking in terms of people making things up and deceiving us.

Here is another way of looking at this. Suppose you were a very gifted, but profoundly autistic scientist. I do not mean just autistic in the sense of something like Asperger's syndrome, but *really* autistic: you are so autistic that the concept of "another mind out there" means nothing to you. You live in a world of things – not a world of people. You are very gifted at making sense of the world in an impersonal kind of way. You understand how atoms make molecules, which make cells, which make brains, which do all these complicated things that go on around you, but the idea of understanding any of

this in terms of "other people's minds" is alien to you. Now, suppose you are presented with two possible explanations of the world. The first explanation is one in terms of physics: stuff exists which does stuff, and it causes things to appear as they are. The second explanation is one in which the world is a computer simulation, but the idea of a computer as some machine built by "somebody" for some kind of motive is meaningless to you. This second description would have to be presented to you in such a way that any references to intentionality, entities designing computers, etc. were removed. Instead, it would just be reduced to a description in which stuff exists which is doing stuff which causes the appearance of the world. Someone less autistic than you might look at this and say, "Ah! that model is actually describing a computer-simulated reality!" but this would not occur to you at all. That would be a particular interpretation of the model which is beyond you. To you, both models would be essentially physics models. This does not mean that the computer-simulation model is as plausible as the "conventional" one: it may be more or less plausible depending on the circumstances, what evidence you have, and what philosophical arguments you think should be taken seriously. However, the fact remains that it would not *automatically* lack any "realness" that the more conventional model lacks. One interpretation of the physics description is that intentional agents are down there, somewhere, buried beneath the fabric of the world – just as lots of stuff is down there, buried beneath the fabric of the world, in any modern scientific model. If a computer-simulated world is necessarily a shadow, then surely any world produced by something "lower level" is necessarily a shadow. (Plato's cave might come to mind here.) Now, suppose you decide that the computer-simulated-world model is more plausible – although you do not know, with your autism, that you have just accepted a simulation theory. Then, your autism is somehow cured and you have this sudden insight that other minds might exist "out there" - and that your physics model is actually describing a situation in which they play a part. Would you suddenly decide that your world is fake? That your experiences are "illusory"?

Holograms

Intentionality in explanations is one thing that may make people treat them as special cases, but there may be others. A well-known, speculative idea is the "holographic universe" model. (I will not bother, here, with whether or not it is true.) In the media this is often described as claiming that the world "is not real". Why? Because it describes an everyday world which is merely produced by something else? Again – so what? Why is this, *in itself*, equivalent to "fakeness"? We have known for a long time that the everyday world is contingent on something else anyway. So why do people seem to associate the holographic universe idea with fakeness? I suggest that one big reason is that we all know what the word "hologram" means in everyday life: it means things that are not really there. As with "intentionality" we think of holograms in terms of "fakeness".

Space and Contingency

In both the situations I discussed above, there is another reason why things may seem "fake" to people. We may be used to the idea that the world that we know is based on something that does not look much like it: that solid objects are based on atoms, that

atoms are based on more basic particles and various physical forces, etc. Most people still have the idea, however, that at least all of this occurs in the same underlying "space" which exists all the way down - that there is some kind of one-to-one mapping between coordinates of things in the everyday world and what is causing the appearance of them. For example, if I look at a table I know it is contingent on more basic things. I can look at one corner and say it is at coordinates (X_1, Y_1, Z_1) and I can look at the other corner and say it is at coordinates (X_2, Y_2, Z_2) . Many people, if they accept that an underlying model applies, would probably think it should still be one in which a space exists, and *something* exists at coordinates (X_1, Y_1, Z_1) in that space to give the appearance of the first corner, and *something* exists in at coordinates (X_2, Y_2, Z_2) to give the appearance of the second corner. Maybe the corners are just whirling masses of particles interacting by fields with each other, but they are still doing it at (X_1, Y_1, Z_1) and (X_2, Y_2, Z_2) or maybe reality, at a low level becomes something other than particles, but whatever it is that reality is doing, we might still expect it to be doing it at (X_1, Y_1, Z_1) and (X_2, Y_2, Z_2) . This expectation of how the "real world" should act seems very strong in people. Kant's conceptual schemes come to mind for me here. To many people, it may be hard to conceive of the world being explained without the low-level explanation having at least this kind of one-to-one coordinate mapping – and we could say the same about time (which I left out of all this for simplicity).

Both the simulation hypothesis and the holographic universe that I mentioned above, however, suggest just this kind of reality: one in which the one-to-one mapping of coordinates in the everyday world onto low-level physics gets lost in translation somewhere on the way down. In the case of a computer simulation, it is clearly likely that the (X_1, Y_1, Z_1) and (X_2, Y_2, Z_2) of the corners of the table do not have to correspond to things at similar coordinates in the actual computer. For example, if the computer has been built on Earth in the 30th century, the computer system doing the simulating could be distributed over the planet. One corner of the table might be simulated by a computer in London, while another corner of the table might be simulated by a computer in New York. It may even be meaningless to talk about "where" a corner is simulated: things might just be distributed all over the place. Even for a videogame, running on the PC of today, most people will see that the 3D videogame world does not map onto some actual 3D structure inside the computer. The holographic universe model makes this, if anything, even more explicit, because it tells exactly how the coordinates are messed up. In this model, our 3D world is produced on a 2D surface, but this does not mean that each corner of the table has a "real" coordinate on the 2D surface. Each corner would be produced by the entire surface, so that the (X_1, Y_1, Z_1) of the first corner would not be explainable in terms of any (X, Y, Z) or (X, Y) at all: the "information" describing this corner would be distributed over the entire 2D surface. Here, the one-to-one mapping has been explicitly lost. About the only thing left is some kind of space – but it is not space as we know it. In both the simulation hypothesis and the holographic universe, there might be an underlying space (and we can question even this for a simulation hypothesis, possibly considering Peter Strawson's articulation of how conscious experience – and by implication the conscious experience of something doing the simulating – could be imagined without any perception of space) but it is not *our* space.

Maybe this idea of one-to-one mapping “all the way down” is important to people when they decide whether the world is “real”? Maybe, in people’s conceptual schemes, concepts like space are so important that the loss of that, at some ultimate reality, is the loss of *everything* – the very fabric of reality – the ability of the world to be supported by anything at all? If so, I would question this. Why should we demand that one-to-one mapping is needed all the way down for the world to be real? The idea has already taken a bit of a knock from “conventional” science. Einstein’s general relativity tells us that Euclidean ideas of geometry are merely an approximation – meaning that the way we think of space in everyday life is just an approximation. I am aware, of course, that this does not mean that if we measured the (X_1, Y_1, Z_1) and (X_2, Y_2, Z_2) positions for the table, that this would somehow disagree with general relativity. (The point is that our “everyday perception” of how space is “working” would disagree slightly from the general relativity version: in that sense, we have already started to lose some of the “one-to-one mapping” on the way down – it is just that the coordinates may not be too well defined in our everyday perception before we actually take the measurements.) Quantum mechanics is also relevant here. Objects seem to have well-defined coordinates in the everyday world, but this idea seems to start getting questionable on the way down. Both general relativity and quantum mechanics seem to be situations in which the one-to-one mapping is compromised quite weakly: they both still seem to involve a space existing in which coordinates of things map onto the everyday world to some degree. However, we seem to accept this without any real concern about whether the everyday world has become “unreal”. We could imagine situations in which the one-to-one mapping is reduced in degrees, so that what exists at a lower level corresponds to objects existing at the (X, Y, Z) coordinates (and possibly time coordinates) in the everyday world to progressively lesser degrees, with the low-level description of reality ultimately not containing anything that could be meaningfully mapped onto the spatial and temporal coordinates and relationships of everyday life in any intuitively obvious way. If this made the everyday world unreal, when would the line have been crossed? Is there a line at all? Is the world supposed to become progressively less real as the one-to-one mapping is gradually lost? I suggest that this is untenable – and the arbitrariness of where to draw the line should support this. We are used to the idea that some concepts become meaningless in a low level understanding of nature: tables and trees vanish and become particles. We do not tend to say that this makes things “less real”, so why make a special case for space and/or time? If space and/or time turned out to be contingent on something else, why should this have implications for the “reality” of the everyday world any more than the contingency of anything else would have?

Conclusion

What I have said does not take away the issue of what is real. Questions can still be asked, for example, about the reality of the world in a computer simulation in which only a small amount of it is simulated in detail and the rest is somehow statistically computed. Here, issues of measure might be relevant. The issue of the “reality” of the everyday world, or of other things, in various scenarios that we might imagine may be a messier issue than it first appears.