

Week 1 Answer to Question 2
Step 2.3 Ask Mark

Question 2: How do you view the role of imagination - the ability to understand or explain someone else's thoughts or actions even though you've never experienced anything like that yourself, or in the case of scientists, to predict some wholly new insight into the nature of matter or forces?

Now, I must be careful not to overextend myself. You know, it's very enjoyable to speculate in response to all manner of questions, but we must recognize when knowledge stops and speculation begins, and in this case, the distinction between knowledge and speculation revolves around the word imagination. It depends what the questioner means by that as to whether I can answer the question on any sort of empirical basis. If by "imagination" you mean - which I think you're hinting at - something like creativity, something like our ability to transcend ordinary cognition and enter the realm of the imaginative - the fantastical, the creative, the literary, the artistic - then I'm afraid we are somewhat extending beyond the bounds certainly of my knowledge.

But if by imagination you mean more the basic mental function of being able to picture in your mind's eye something that isn't there in front of your physical eyes, to be able to construe something mentally which isn't empirically present, then we do have evidence that at least begins to speak to your question. And that evidence is really quite banal. It is that our imagination, that is to say our mental imagery, plays out over the same neurological architecture as our perception does. In other words, what you see or hear in the present moment in the outside world is registered in the same part of the brain, in much the same way as happens when you picture something in your mind's eye, or when you hear your mind's ear, as it were, something said that isn't actually being said right now.

So that's the starting point of my answer to the question: it is that, in fact, all of our imagining is based on mental traces, on neural traces, of previous perceptual experiences. In other words, imagination is a reactivation of memories of things experienced before. Now that might seem to be a circular line of reasoning, because the question you're asking has to do with things that you've never seen before, things you've never experienced before. How does this happen? And

the answer seems to be that how it happens is by reassembly, in novel ways, memory images that already exist from past experience. In other words, as you know from your own experience, we're not capable only of remembering concretely things that have happened to us before, playing them or replaying them in our mind's eye, but also of reassembling those things in novel ways, and in this way imagining things that we haven't experienced before.

But - and here's the important caveat - but there are limits on our capacity to imagine. And those limits are imposed by the constraints of what we have experienced before. What we've experienced before, for starters, is going to be bound by the five perceptual modalities that that we are given. We only have five perceptual modalities, and we are only capable of thinking in those perceptual modalities. And then, too, we tend to rely, for the most part, on only two of them, that is to say vision and hearing. We must remember that these are representations of the world derived from the samples of reality that our perceptual instruments are capable of. So that's perhaps the most radical, as it were, 'illustration' of the point that I'm making, which is that our imagination is much more constrained than we would like to believe, in terms of the basic ingredients, the component parts that we then are able to reassemble in novel ways.

So with that very roundabout, and I'm afraid probably not particularly [glitch in audio] answer, I don't think that I'm really meeting the need that lies behind the question. Nevertheless, I think that the answer is something along those lines - that imagination is simply re-experiencing what we've experienced before, reassembled or assembled afresh in a new way. Perhaps a silly little example of the sort of thing I'm talking about so we don't get lost in abstractions: I'm sure that many of you have had the experience that I have frequently where we are told about somebody whom we have not yet met, a friend speaks of somebody that we're about to meet, and then when we actually meet them, we're surprised to find that they don't look like the person that we had in our minds, you know, that we are constantly assembling, from previous experiences, predictions as to what our future experiences are going to be like. And it's only when we have those new experiences - truly new experiences - that we are able to transcend the limits of our imagination, which, as I say, are constrained by our memories of previous experiences. So that's the best I can do with that question, and, with apologies, we now move on to question three.



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