

Week 4 Answer to Question 1
Step 5.3 Ask Mark

Hello. Welcome to the fourth session - question-and-answer session called 'Ask Mark' - I'm Mark, and here comes the first of the questions that have been selected for us by the mentors. Here's the question:

Question 1: you speak in very broad terms about cognition and emotions. It's very enlightening to me when you use the external/internal distinction to differentiate these two forms of mental life. Speaking in terms of functional brain asymmetry, would you confirm that the right hemisphere is more internally oriented, and that the left hemisphere is more externally oriented? And if not, then what kind of basic distinction would you choose - if you had to - to explain brain lateralization.

Well no, I can't confirm that the left is more externally oriented than the right hemisphere, and that the right is more internally oriented. In fact, if I had to choose along those criteria I would say it's the other way around. The right hemisphere is more externally oriented, the left is more internally oriented. But here we're using the words internal and external differently from how I have in the course. As you correctly say, in the course I have, very broadly speaking, associated internal - internally oriented brain processes with affect or emotion, and externally oriented brain processes with cognition. That distinction anatomically coincides more-or-less with the internal and external aspects of the brain itself. The outer surface of the brain and the outer sheaths of the brainstem are the parts of the brain that deal with the outside world, and the more medial, deeper brain structures, and the core of the brain stem is oriented more toward the internal world, the internal milieu of the body.

So I suppose I'm therefore forced to address the question in the alternate version, where I'm asked how then would I dichotomize the functional asymmetry between the two hemispheres. There's a lot of information about this, there are many different ways in which this dichotomy has been conceptualized over the years, and all of them have a little bit of validity. I mean all of the scientific ones - there are also popular psychological ones which have no validity like that the right hemisphere's creative. The right hemisphere's the dreamer, the left hemisphere, you know, is the scientist, and the left hemisphere is the chartered accountant or something. But in terms of

the scientific distinctions with the left is more language oriented, the left is more logico-grammatical, the left is more analytical, all of those things are, you know, in a sense there's some validity - that the right hemisphere is more spatial, that the right hemisphere is more holistic, that the right hemisphere has more to do with simultaneous patterns rather than sequences which the left hemisphere deals with - all of these things have some validity.

But of the choices, of the generalizations of that kind that are available, the one that I find the most - the closest - comes closest to the essence of the matter, is that the right hemisphere is more oriented - in terms of attentional focus - it's more oriented to here-and-now, external world changes. It's sort of more open to and evolving, developing - it's a sort of a scanning type of attention, looking for novelty, taking on board unexpected developments, etc. Whereas the left hemisphere's attentional focus is more narrow, it's more of a kind of "I'm focusing on this thing, and I'm working on it, I'm dealing with this problem." So it's a sort of narrow, intensive, goal-oriented type of attention, whereas the right hemisphere's more kind of a free-floating kind of attention.

For the reason that the attentional modalities are, in this very broad way, different between the two hemispheres, the right hemisphere is more oriented to the external world, and the left hemisphere is more working on problems which sort of by definition means "I've already internalized this thing, and made it into a mental task, now I'm focusing on it." Even if it's an external object, one is doing something with it, so it's more - it's more internally oriented in that sense of the word. I hasten to add that all of these generalizations don't really do justice to the difference between the two hemispheres, mainly because there isn't only one thing that differentiates them - it's in fact quite a multi-faceted business. I would also like to add that the functional asymmetries we're talking about don't apply to the whole of the hemisphere. The primary cortices - that's to say the parts of the cortex that are connected directly to sensory organs and the muscular apparatus - are in fact bilaterally symmetrical, they do the same thing in both hemispheres, just with different halves of the body. It's only the higher association cortices that are asymmetrical, and it's in that respect that I would dichotomize them in the way that I have, in respect of the association cortices only. So that's question one.



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