WHAT IS A MIND?

UNIVERSITY OF CAPE TOWN

WEEK 6 – ASK MARK, QUESTION 1

Hello. Welcome to our very last question and answer session, the sixth one. Question one goes like this: I have always thought of the unconscious as a mysterious aspect of our brains. The way you frame it sounds as though it's merely to operate functions that don't need our conscious thought; i.e. breathing, walking a familiar route to work, etc. Or do you feel that the unconscious has more of a role to play in how we behave?

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Now, it's certainly true that our aim – that is to say people working, doing research in this area – is to try to make the nature and functions of the unconscious part of our mind less mysterious. We're trying to understand how it works, but it still plays no less a part in our mental life. The fact that we understand more about it makes it no less amazing. I think perhaps the most amazing thing that we've learnt in recent years about the unconscious is just how vast it is. I said earlier in the course itself that we're only able to hold seven bits of information in our conscious cognition at any one point in time. That's a generally accepted rule. Now, as I've said in the course, if we can only hold seven bits of information in consciousness simultaneously and you compare that number seven to the absolutely enormous amount of information that constitutes your store of knowledge, the store of everything you've learned from experience, then you get some sense of just how vast the unconscious is.

The other thing that we've learnt through cognitive neuroscience in recent years is that there are many different types of unconscious cognition, many different unconscious memory systems. What all memory systems have in common… and remember our thinking processes are ultimately derived from memory systems. Working memory – that is to say thinking – is the manipulation of information drawn out from long-term memory systems. The… all of the information in all of these memory systems ultimately takes the form of predictions. That is to say, we don't just store information for the hell of it. Our memory systems are not some vast archive or library in our heads where it's nice to have all the information stashed away. Rather, the information is in the nature of knowing what to do. What do I do given the following circumstances? Given the situation I find myself in now, based on my past experience, what do I do? How do I meet my needs in the world given all the facts of what I've learnt? That's the essential structure of memory. It's what to do.

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And what I have said… the main thing I emphasise, which is the questioner is a bit disappointed about, is that the main way in which memory becomes unconscious is that it becomes automatized. That is to say, something that is in conscious working memory today in short-term memory gets shunted into long-term memory, into initially what we call episodic memory… that is memory of the events, the actual experience of thinking through or doing… solving something in the doing of it. It then gets shunted into what is called semantic memory, which is more in the nature of rules and sort of abstractions rather than the actual concrete events. And then ultimately the aim is to store it in procedural memory. Procedural memory is different from the first three systems in that there is no representational content. There is no picture in the head; not even in the nature of words. It's just associative. This happens. That is the response. It's completely habitual, stereotyped, and automatic. Our aim is to get as much of our memory functioning that way as possible. Believe it or not, the aim of cognition is to get as much of our memory to function that way as possible so that we can free up the limited memory space that is representational and very much more limited memory space that is representational and conscious. So, the aim of cognition – to put it in a different way – is to solve our problems, to learn what to do, to know how to deal with situations automatically so that we don't need to think about it.

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Now, I – for one – think that is quite amazing. That seems to be the general rule about how things become unconscious. What the questioner – I think – is also alluding to is the fact that that is a kind of mundane cognitive mechanism. There's nothing emotional about it. There's nothing motivational about it. Well, first of all, there is something motivational about it and that's what I meant by intentionality when I said that all of our cognitive processes are ultimately intending toward objects in the world because that's where our needs can be met. So, even once something is automatized it is automatized only because it works in relation to meeting our needs and therefore it is motivated ultimately, but I think much more important is to add that there is one part of the memories that we automatize – a very large and a very important part – which works slightly differently and this is what Freud called the repressed. This part of our memory also is automatized, also aspires… if you'll forgive the anthropomorphism, also aspires toward, tends toward automatism, toward associative, just this [? 00:05:46] sort of reflexive responses, habitual responses, thoughtless responses, but this part of our memory is predictions… is made up of predictions which are… which do not fit the bill and the reason why we have so many predictions which we repeat endlessly – that is to say, why we have modes of operating, ways of dealing with situations, and methods of meeting our needs in the world which do not work – is because… the simple fact is because there are some problems which we simply cannot solve, especially when we are little.

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There are many problems that we just cannot solve, so we face a choice. Either we endlessly carry on ruminating about the question, how am I going to be big like Daddy, how am I going to have a spouse like Daddy, how am I going to have babies like Mummy, how in fact am I going to get Mummy to be my spouse, you know, how am I going to get a job, how am I going to get a car… when you're four or five years old it's just not going to happen. So, you want it very badly and I'm giving this sort of famous paradigmatic example of the Oedipal complex, but there are many such things and not only in the nature of insoluble problems because there are aspirations which are beyond your means but also because there are situations in which there are insoluble conflicts. For example, I love my Mummy. I need her more than anyone in the world. I want to keep her near to me and safe. On the other hand, I hate my Mummy. She frustrates me. She keeps me from all the things I… all the other things I want in the world. She is the one who prohibits me from getting them. She doesn't do my bidding as and when I want it and so I want to destroy my Mummy. These are the kind of strong affective feelings that little ones are driven by. There's a conflict. The very same person, you know, you want to keep and protect you and you want to, you know, give her a crack because she's frustrating you so much and you want to be rid of her. You want to literally murder her, is the level of the rage that a little child is capable of. So, there's an insoluble conflict, so what you do is… rather than endlessly try to resolve it, you just automatize your non-solution and then once it is automatized it carries on controlling your life – in fact, all the more controls your life – precisely because you are not conscious of it. So, you repeat predictions which don't work and so you're endlessly confronted by prediction errors.

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Let me explain… I know all of this sounds non-mysterious and that – as I said – is the whole aim. What I mean by prediction error is that the feelings which are the… which represent the demands on the mind to perform work, the feelings which led you to try to think your way through the problem in the first place. Because you have not resolved the problem, the feelings will not go away and so you don't know why you keep on finding yourself in a situation where it ends in tears and our patients therefore suffer mainly from feelings. They don't come and say, I've got something that's unconscious, Doctor, can you tell me what it is? Instead they say, I've got this feeling, Doctor, can you please take it away? And that's the explanation for it. That's what the repressed is. The repressed is prediction errors endlessly repeated because we've automatized a way of being, a way of acting which doesn't work and we did that to cut our losses when we were little. There's a lot more that's in the unconscious. For example, in the earliest years of life before the episodic memory structures are laid down, they don't yet… they're not yet operational. Then we have affective or emotional learning structures which work entirely independently of conscious… cognitively conscious, episodic, working, and even semantic memory systems so that we have learnt emotional… on the basis of feelings we have automatized ways of behaving and we have no possibility of knowing what the situations were, the actual episodes were that gave rise to those associations because the part of the brain that lays down episodes was not yet mature and so on.

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There are many more. I'll mention one last one which is priming. That is to say, you can be… your cortex can be primed. It can subliminally register a stimulus. You don't know that you've registered some sort of cognitive bias, something

which has affected the way that you're going to behave, and then it does affect the way you behave or the way you think without your knowing it. This is this kind of subliminal influence that we're all so familiar with. So, all of these things are operating all the time. There's a vast amount of the mind that is unconscious. It is every bit as powerful and as important as we ever thought it was in the past. The only thing is that we are beginning to get a better grip on how it works, why it works like that, what the mechanisms are.