



UNLOCKING  
CONSCIOUSNESS



## **BRIAN MIND FORUM**

### **Appendix 019**

#### **Free will**

There is much debate over whether we are just a sack of sophisticated protein cells, sometimes unflatteringly described as an ambulatory computer, at one extreme; or whether we have evolved into fully sentient beings, aware of our surroundings and entirely responsible for our own behaviour.

This subject can very easily be hi-jacked by religious arguments over the presence or otherwise of a creative god or some form of intelligence that formed the universe in the way we are able to understand it. The object of this appendix is to steer clear of that entanglement and concentrate only on what we can observe, touch and understand.

The debate on whether we have free will has been in the news recently as a result of various experiments that have shown conclusively that activity in the brain regularly occurs before we are aware of taking some course of action. Who then, or what is making these decisions?

Equally, there is considerable evidence that, in an emergency, we respond as fast as possible, completely by-passing any hint of using precious time to 'think' of the best reaction. In fact, there is a very strong argument that the whole drive of evolution has been to respond to incomplete information as fast as possible – and stay alive to pass on those efficient genes.

There is, however, a cogent argument that combines these two effects but leaves the responsibility entirely in our own hands.

We have argued extensively in chapter XX that the instant conditioned response is clearly visible in very ancient organisms that have survived so that we can observe them. Similarly there is strong evidence that the advent of language caused a lot of changes in the brain. And, in particular, the ability to reminisce about the past and imagine the possible future course of events. Both only exist as abstract constructs in our memory. This helped us learn to process three versions of every situation: what is happening now: what has just happened and happened in a similar situation before; and what might happen next.

Thus, what is 'now' becomes less sharply defined.

As we began to store and process a plethora of words, phrases and abstract concepts so we began to be able to debate where we have come from, what the present is all about and what the future holds. We began to grow a mass of new neuron links and structures to store and

process a hundred thousand words and counting and that in just one language. We mostly use words in phrases and larger combinations as we relate words to other words and sensory images which maximises the meaning to us. We may have begun to develop more complex neurons that could act as 'group co-ordinators' to keep track of the upsurge of conventional neurons. James Crick and Christopher Koch have identified a group of 'spindle' neurons that have a very large number of axons and dendrites and seem to be unique to our species.

Similarly, as society began to be more complex our behaviour became more important. We gained clear evolutionary benefits from developing a feed back facility, and a means of monitoring the reactions of others. Mirror cells, which help us imitate others are found in many species so this more sophisticated facility may have built on this.

Checking up on what our arms and legs have actually done as opposed to what we thought we had 'asked' them to do, suggests both a senior level of processing and a delay. Developing a facility to monitor what we are saying in, say, an argument could be very useful. The arguments we are putting forward come straight from the emergency response system. "Wait one minute, at this rate I am going to lose this argument. Change tactics" is a very valuable facility.

We are building up the case for a superior level of cognitive capability that can oversee the day to day automatic responses of everyday life, process feed-back from every situation and monitor our behaviour to gain maximum control of ourselves.

So, who makes the decisions? The answer is that in everyday circumstances the underlying operating system – the autonomic system - goes about monitoring the outside world, our place in it, and executes appropriate applications largely automatically. This system makes a decision and, milliseconds later stimulates the senior system to monitor it is being carried out correctly.

Thus we seem only to be conscious of that action after we have executed it.

However, this senior system can do far more. While the autonomic system is coping with the everyday world this senior system can be processing quite different data –thinking about the solution to some interesting problem, perhaps. Parallel processing. Thus the autonomic system can be driving a car on autopilot, while our senior system is conversing in detail with our passenger.

It is this senior system that is 'imagining' the possible future course of events: a completely abstract concept, which uses and relies of all our real life experiences, but is itself a purely abstract neural construction.

Furthermore this 'semi-detached' system is fully under our control and enables us to direct what we will think about. Here is the source and mechanism of how we initiate activities.

We have this facility and it is where we converse silently with ourselves, argue with ourselves, lecture ourselves, berate ourselves. Here is a very large part of our consciousness and also the seat of our conscience.

Recent research by Neuroscientist Howard Poizner at the University of California at San Diego has demonstrated that if someone is shown a familiar image, but with one detail changed, the brain knows something has changed before our mind (consciousness) can comprehend it. (Report SA Mind Sep 2016 p61)