DREAMS ARE SUCH THINGS…

ABSTRACT

Evolution, the working-out of animal ancestry, has largely been overlooked in the search to understand consciousness and dreaming. And, although both consciousness and dreaming have had their fair share of attention and experimentation they remain relatively unexplained.

Dreaming and consciousness are usually described as phenomena. I want to bring them both closer to the real world as we know it. My desire is not to argue with academics but to urge them to investigate evolution further than has been done to-date. The one way to do this it seems, is to go back, perhaps billions of years, to try to imagine being a simple cellular mass, itching (for want of a better word), to survive. This exposition can only make an attempt to describe the progress of evolution. It contains simple conjecture arrived at through a mixture of common sense and logic. It will attempt to demonstrate why, and when, during the process of evolution these two phenomena/adaptations, plus other necessary adaptations, emerged; the probably order of each emergence; and posit their survival advantages.

INTRODUCTION

The questions being asked by neurophysiologists, psychologists and philosophers are chiefly concerned with how do we understand consciousness and dreaming? Instead of when and why were they adapted?

In some instances dreaming and consciousness are being correlated. Antii Revonsuo (1995:1) in his abstract: ‘Argues that dreams are essential to an understanding of waking consciousness’. David Foulkes, amongst others, in Antii Revonsuo, (1995:2) also wants to connect dream research with the current cognitive

theories of consciousness. Also, Patricia Smith Churchland (1998: preface) says that she believes, a unified theory of how the mind-brain works is essential in order to understanding the phenomena.

These approaches are being carried out through examination of the modern brain; animal, or man and their activities/survival tactics. But, sophisticated; more complicated adaptations may well be hiding the original basic survival prototypes.

An apparent different approach to understanding consciousness and dreaming comes from D.C.Dennett (1991:173-226) when he states that: 'The design of our conscious minds is the result of three successive evolutionary processes, piled on top of each other, each one vastly swifter and more powerful than its predecessor, and in order to understand this pyramid of processes, we must begin at the beginning'.

This quotation points to the relevance of understanding the evolutionary process, but unfortunately he then goes into the modern mechanics rather than pursue an imaginary evolutionary tract.

Antii Revonsuo (1995:2) asks: '(1) How do we isolate consciousness? (2) How do we describe the system thus isolated? (3) How do we reveal the mechanisms on which this system is based?'

As the mechanisms he refers to are survival adaptations, I feel that he too, senses that examination of the process of evolution may hold a key.

Another evolutionist I believe, is A.G. Cairns-Smith (1996:preface), He says: 'Consciousness remains a mystery. What today's molecular biology fails to provide is an understanding of the origin of consciousness as a phenomenon, a proper understanding of what consciousness is in physical terms'.

As regards, dreaming? O. Flanagan (2000:115) suggests:

'It is that sleep and the phases of the sleep cycle-NREM and REM sleep - were

selected for *and* are maintained by selective pressures. They are adaptations in the biological sense. However, the dreams that occur during NREM sleep and REM SLEEP are likely epiphenomena in the sense that they are serendipitous accompaniments of what sleep is for. Whereas an ideal adaptation explanation can be sketched for sleep, it is exceedingly hard to imagine even the beginning of such a sketch for dreams.'

Flanagan also describes dreaming (2000:93-124): as being 'mental spandrels'.

But what gap is the spandel/bridge covering? Does he mean between wakefulness and sleep, or consciousness and some kind of non-consciousness?

For it to be simply an inert existence the phenomenon is remarkably active. And, if as Flanagan suggests dreaming is not a survival adaptation, then why is the phenomenon still so strong and intrusive today?

For decades it has been known that sleep is composed of various stages. The principle ones being REM and NREM. M. Jouvet (1999:62) states: 'Developments between 1953 and 1986 demonstrated the close relationship in humans between paradoxical or REM sleep and dreaming as long as the definitions were clear'.

Suppose, we are wrong in assuming that dreaming is dependent upon sleep. May it not be, that we are able to sleep, because we can dream?

T. Allison & H Van Twyver (1979: 63) state: 'One of the most striking and unexpected findings of sleep research is that newborn mammals, whether they are humans, cats, or rats, have much more REM sleep than adults.'

The problems facing a researcher, who attempts to fathom the early survival adaptations that enabled some cellular masses to evolve into animals/human beings, are not insurmountable. The proposed adaptations should be simple, and useful, and innocent of predestination other than survival. Also, the proposed adaptations should

reveal, each one having emerged in order; either complimenting the one, or the ones, previously adapted..

Early necessary survival adaptation that I suggest, are the prototypes of: memory; communication; mobility; recognition of vibrations; and consciousness. Dreaming will ultimately, I suggest, be shown to be an evolutionary survival adaptation which emerged following the combination of the earlier adaptations, and is possibly the adaptation that enabled sleep to emerge

A THEORY DESCRIBING THE EMERGENCE OF CONSCIOUSNESS AND DREAMING..

The starting point of my exposition is probably billions of years ago. It is at the stage during the process of evolution when cells to a limited extent, could be considered to be alive. Patricia Churchland (1998:1) describes them as: 'excitable cells'. They are without direction or intent. They are amassing, and merely trying to survive.

A.G.Cairns-Smith (1996:125) appears to liken the cellular mass to a village evolving. He explains that new arrivals with new ideas help a village to survive. And he believes that in a similar fashion, as the cells amassed, new arrivals probably brought with them their own ways of surviving; the differing ways of surviving entailing a need to adapt in order to survive within presumably, a difficult environment

However, I suggest the beginning of consciousness was not brought about solely by the instinct to survive.

The cellular mass would be growing in size; adding to itself but without any control as to where it was or what it was affecting it. Obviously its surrounding

environment would be pretty lethal. So I suggest the only way for it to survive would be adapting to cope with that environment. How could this come happen?. I suggest the Law of Mass Action came in affect?

C.M.Guildberg and P. Waage (1864) describe this activity of equilibrium. It is this activity of equilibrium, I suggest, that enabled the cellular mass to 'survive'. Because, in a way, the cellular mass had to become a part of the environment.

Jacques Loeb (1902) says: 'My first aim was to find out whether or not it is possible to alter the physiological properties of tissues by artificially changing the proportion of ions contained in these tissues.'

The environment in which cells were amassing was doubtless a bombardment of waves of differing electrical energies. An 'excitable cell' points to electricity being involved in cell 'life' too. I suggest differing energies may have been attracted to the energy in the cell.

Loeb Jacques (1902) goes on to state: 'I believe that all these experiments proved what I expected they would prove, namely, that by slightly changing the portion of ions in a tissue we can alter its physiological properties'.

This statement leads me to suggest that the electrical reaction within the cellular mass may have been the production of a physiological change. The effect might have been slight at first, but because of constant activation, the photons would have encroached further and further into the interior of the cellular mass until, eventually, the charges existed long enough to reach into the centre of the mass.

Did such activity cause; a chemical reaction?

The activity, I suggest, may have caused an area within the cellular mass to be capable of registering notations/ marks produced by the electrical charges.

This centre I suggest, became tissue which began to be 'marked' by the electrical

charges, not only that but also, eventually, it became a place of retention of the ‘marks‘. Because of this retaining ability, I suggest the beginning of the gathering of information about the confusing world outside of itself, emerged. It was a bank; a ’memory’

In fact, I suggest that the adaptation was the cause of basic memory coming into existence. Also, I suggest, the electrical activity; the carrying of information into the centre of the mass was also an adaptation; this adaptation being the basis of communication.

Ultimately, these two adaptations would have brought about, eventually, in a very simple way, the beginning of the ability of the cellular mass to produce within itself, an idea/image of the environment around itself.

I suggest that the place of retention was the beginning of a primary memory, and transmission of the energy carrying basic information from the edges of the mass, was the beginning of a primary communication. There would have been no understanding of the value of these adaptations except that, if they added to the tactic of survival, then the cellular mass would have continued to survive.

I suggest these two primary adaptations occurred very early on, because without memory coming into existence would not the mass simply have continued ‘going round in circles’? I suggest that communication and memory, in very simplistic forms were the first adaptations leading towards consciousness.

A subsequent adaptation may have come about through some kind of probes emerging from the mass. Alternatively, (and perhaps more likely) single strings of cells could have been caught up, and these cells being suspended to the outside of the mass would have been affected by the environment.

The effect would have been to increase movement of the mass, and also at the

same time they could well have helped by increasing the area of the mass and thereby, the amount of 'information' being transmitted to the primary memory. However, another adaptation could have resulted from this encroachment; the adaptation of mobility. For as well as being a new method of obtaining information, moving away from, and later going forward, could perhaps have become the next life-saver. As, to a very limited degree, the mass became aware of the differing effects of moving about in the environment. Though the movement of the mass, until some kind of control was established however, would still have been 'hit and miss'.

Cairns-Smith (1996:247) says: 'A structure, evolved under one set of selection pressures for one purpose as we might say, sometimes turns out to have other fortuitous uses……radically new inventions do not spring fully formed into existence'.

Following on from the adaptation of a primitive memory, a primitive communication system, and simple mobility another survival adaptation may have emerged. This adaptation, I suggest, was brought about because of the encroachment of the cellular mass into the environment, for the extended cells could have increased the area of the cellular mass, and thereby may have given more access to the environment.

Environment consists of vibrations. It would have been a combination of vibrations that was being 'noted' and retained by the primitive memory.

This being so, presumably knowledge of the outside world could, very, very slowly have come into existence as, with the influx of vibrations into the cellular mass perhaps a further adaptation enabled the mass to identify that there were differences within the influx. Patterns become distinguishable. And these recognized as differing-patterns being gathered within the primitive memory, I suggest, could have resulted in

the initiation of primitive sensory activity. The result of this emergence would be an important increase in the cellular mass's 'knowledge' about the environment. The differing vibrations would be audio and light waves. With the adaptation of these primary sensors, interpretation of the input would become over millions of years, our ability to 'know'. As they would have enabled the cellular mass to see, and perhaps hear, in a very primitive way. This activity would eventually be the basis of our current sensory systems.

These early adaptations would have opened up the cellular mass to its long, long evolutionary journey.

Through intelligence gathering, and reacting, the mass would then be becoming, in its slow and now apparently ambitious manner, an inter-actor with the environment.

Was this initial simple ability to interact with the environment primary consciousness - the pre-cursor of the most enigmatic and important phenomenon of 'life as we know it'? I believe it to be so. I believe that, in the slow evolutionary way, the cellular mass was beginning (and then continuing over millions of years) to 'feel' like a partaker of the world. In control of itself but remaining unaware (like the cellular mass of today - ourselves) of being controlled, to a large extent, by the environment.

Because conduction of the extraneous (environmental) material into the cellular mass, over time became more efficient, it probably became necessary to evolve, either a far larger area, and a better method of storing information, with a speedier working ability, or to remain 'satisfied' with just a primitive brain with its limited gathering and storing and circulating of information.

Maybe such primitive information gatherers evolved into insects and even invertebrates. And the cellular masses which continued to evolve became vertebrates.

The growth of the cellular masses with primary activities only, became the earliest part of our brain; the brain stem.

Adaptation which led lead ultimately to ourselves and other animals, was the brain stem beginning to create a larger surrounding mass; the cortex. This further adaptation was the development of a far larger mass. Such as had become necessary because the cellular mass's primary systems would have been unable to cope. As the incoming messages from the environment probably were increasing in number, as well as arriving at a greater speed.

This adaptation would have involved the creation of more elaborate systems. I suggest they would not be replacing the primitive ones, but simply using them as prototypes: building upon primitive systems which had been successful at facilitating their survival.

Because of the adaptation of our modern systems, consciousness became the full-blown interaction-with-the-environment that we are privileged nowadays, to have.

I suggest that our primary and secondary (up-to-date) systems, though not equal, perhaps work in parallel; they make up what we describe, as our unconscious and conscious selves. The primary systems, because we cannot consciously interact with them, are our unconscious selves.

Why we cannot interact with our unconscious selves (the primitive systems) is because, I suggest, our brain both primitive and modern parts, created their own communication systems. It seems sensible, because of this, to argue that as the primary part of the brain, (the brain stem) created the modern brain it, to some extent, is able to understand the language of the modern part. But, is it possible for the modern parts to understand the communication of the primitive part? I can find no reason to suggest that that is so.

I suggest the ancient or primary part of the brain reveals itself as:

(a) in the manner in which we 'know' we have forgotten, or haven't done something we should have done, and is 'informing' us in it's own language; which may be some kind of 'emotional' reaction and also;

(b) I have come to believe that it manifests itself as dreaming.

Why the latter? I believe several pointers suggest that to be so. For example:

(1) Our life-preserving organs are to some extent controlled by the brain stem. If, as it is now believed, during sleep the later developed part of the brain is busily occupied rejuvenating itself (or whatever it does during sleep) would not chaos or death, possibly or presumably, follow? If so, does keeping us alive and safe, during that period, revert back into the hands of the primitive systems?

(2) Dreams appear during sleep. The cellular mass surely had a survival tactic system in place during sleep. Without it, would the adaptation of sleep have emerged?

(3) Imagery could be the communication method used by the primitive brain/ brain stem. Dreaming appears to be mostly of imagery content.

Kenneth D. Howell (2006:66) writes: 'Specifically, we found that dreaming is a consequence of activity in the brainstem arising from the biological and functional imperatives of it's constituent structures'.

I am suggesting that dreaming is the ancient part of our brain stem letting us know that it is in operation and, because this ancient part understands cortical communication perhaps only to a limited extent, its images may well contain facts of our life in a rather distorted form.

As regards consciousness, in some quarters it is believed that:

(a) it concerns the alertness and the erudition of mankind, only and

(b) it is possibly a control system in the cortical brain.

These ideas appear to have been arrived at solely through observations of ourselves. Must we accept them? Or are these apparent facts disguising truths? Let's consider Consciousness again:

(a) is it just a description? - I suggest it is a description, in that it describes the activity of the brain interacting with the environment.

(b) Whereabouts is consciousness? - I would suggest; that is an erroneous question.

(c) What is the nature of consciousness? - I suggest it facilitates 'animal aliveness' as we know it.

(d) Is consciousness a controlling factor? - I would suggest the environment is to a very large extent the controlling factor.

(e) What is the definition of Environment? Chambers Dictionary states; it is: 'The surrounding or conditions within which something or someone lives'. Therefore, everything external to each own-self, is environment

Is it not a fact that when we wake up in the morning, the senses, in touch with the environment immediately, come into play. Memory is alerted, which in turn alerts emotions, and we become happy. Or sad, maybe, or even fearful? etc. And go on from there.

Note, I suggest Brain, first of all the primary part, and then the secondary part, created its own communication systems. It is a function of those parts. It is not something that mind creates. Mind, in my view is the medium enabling conflation of information from different sources of the cortex, to occur. I see it as resembling a community of 'people' with differing knowledge and ideas, confined within space, and having the job of keeping the whole cellular mass safe, well, and knowledgeable. The way they do this is by chatting together.

Professor A.G. Cairns-smith (1996:250.) offers a succinct test to check the validity

of any proposed explanation of consciousness. He says consciousness should be:

‘(1) seen as a physical effect which.’ - In it’s secondary phase, I believe it manifests itself as Mind. Whether, and how, it reveals itself in the primary phase, at the moment, seems to be unknowable

‘(2) is not difficult to produce in a rudimentary form but which’ - I believe in it’s rudimentary form it would have been necessary, and would have been adapted early on in evolution’

‘(3) is now created by somewhat specialised brain structures, and’ - I believe that with the advent of the projections into the environment, the activity of primitive interaction with the environment really began. Then it increased an hundreds-fold during evolution. Resulting ultimately, in the emergence of the later brain structures with fully-blown sensory systems

‘(4) is not simply a channel of information’ - I believe consciousness is interaction, and not communication, with the environment.

It would be interesting to know whether the brain of the invertebrate while it is awake, shows loops similar in character to the dreaming brain of the vertebrate. In other words, is the invertebrate living almost only, with brainstem primary consciousness available?

I suggest that mostly nowadays, the concept of only humans being the recipients of consciousness is outdated. Instead I suggest, that the degree of a species ability to interact with the environment depends upon it’s maturation of a cortical brain. Or if little or no cortical brain has emerged, then the amount of interaction with the environment that the animal life has acquired within its brain stem. Those are the factor that decides its degree of consciousness.

CONCLUSION

My findings are that the Law of Mass Action caused/allowed the cellular mass to evolve. And that Equilibrium, (the cellular mass and the environment interacting) was the original force, rather than Survival. I say this because I cannot conceive the concept of survival having existed before some interaction with the environment took place. And, that interaction with the environment is the essential ingredient of life.

The answer to what is consciousness, and what is dreaming is, I believe consciousness to be interaction with the environment. That it is this interaction which in turn stimulates memory, emotions etc. And that dreaming is a manifestation (communication) of primary consciousness.

As a result of this research, I believe it is the physicist who will eventually explain the truth of evolution.

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