

## Dreams - "A Royal Road to Consciousness"?

J. Allan Hobson suggests that "dream consciousness is ontogenetically prior to waking consciousness and that it serves a foundational function in preparing the brain-mind for its highest evolutionary achievement, waking consciousness in human animals. REM sleep may constitute a protoconscious state, providing a virtual reality model of the world that is of functional use to the development and maintenance of waking consciousness". (Hobson, 2009)

And more importantly "what (Hobson) suggests is that dreaming may be a royal road to consciousness itself." Merriman (2009) describes Hobson's theory and some of its advantages in a simple way which, to me, seems excellent. It also has the advantage of an element of generality, a point I refer to later. Hobson's AIM model was already outlined in Hobson (2000).

In my opinion, this seems like a workable model - among several possible contenders - within the B series, as a more detailed frame of reference for a model of the A series within the B series. (See Yates, (2007) et al for earlier such models which could probably reasonably readily undergo appropriate modification). An important difference between Hobson's model (H, say) and such a model as suggested here (H1, say) could be that H1 is likely to contain features specifying a particular H likely to be within but not necessarily specifically interacting with a group of H1 models.

Hobson indicated that astronauts should dream much more in space than they do on Earth simply because there's more motion for them to cope with. Weightlessness takes away up and down as references. So if REM sleep promotes changes in the brain that help astronauts adapt their motor system, particularly balance, to the near absence of gravity, there is likely to be a need for more REM sleep.

Hobson and his colleagues at the Laboratory of Neurophysiology had fitted astronauts and cosmonauts with the usual "Nightcaps" (Stickgold, 1996) to record their dreams while they lived aboard the Russian space station Mir. However, NASA data collected over 6 months of flight indicated that extended space flight leads to a consistent and pronounced decrease in sleep efficiency, time spent in REM sleep, and the percent of total sleep time spent in REM sleep as measured by the Nightcap (Stickgold, 1996). As far as I am aware, that is how it still stands, whatever proffered reasons may exist.

So Hobson's theories are far from proven. Revonsuo, and others like him, claim that dreaming is not simply a random by-product of REM sleep physiology. Revonsuo claims that the form and content of dreams is not random but organized and selective: during dreaming, the brain constructs a complex model of the world in which certain types of elements, when compared to waking life, are underrepresented whereas others are over represented. All this sounds as if it could be roughly in accord with fact - which is all we need at this juncture to help model-refinement. Wargo's (2009) adversely contrarian comments on Hobson's theories do sound like reasonable folk psychology even though he says "At least Freud was on the right track. The newest theory, by J. Allen Hobson, is about as off the mark as most of the recent ideas I've read." Even bearing Wargo's comments in mind, we can come closer to Revonsuo's views and at the same time use an infrastructure somewhat like that of Hobson. Its probably not at all necessary to accept at this stage Revonsuo's evolutionary theories as this could clearly move needlessly far from Hobson.

But it may be worth pointing out that some of the views of Allan Hobson, in a similar way to those of Patricia Churchland, can present a rather dry, abstract scene, somewhat barren of humanity, which does seem rather characteristic of the intensely mathematical approach of Sir Isaac Newton and his many successors. This is a view which has been very successful in some ways, but, rather

like an old plaster wall stripped of wallpaper, by its meticulous bareness and the necessary attention to often unwelcome detail, may also present us with nooks, peepholes and crannies through which we may be able to gaze on fairy seas of the soul, or on cool meadows and pastures, with a sweet flowing stream and placid cows grazing if you like... In short there may be a partly simplistic version of the A series available to us within the B series as long as we do not take there to be a precise one to one mapping of either. Whilst excessive mathematization at an early stage may not allow a comprehension or a mapping of the soul, it may nonetheless allow at least a partial representation of the soul (or of consciousness), if not in the precise terms of either A series or B series. Scarone (2009) and perhaps Sutton (2008) and Rauch (2009) may help to define the way. Clearly, too, there are great possibilities in the X-phi direction.

More may be added to the model in due course.

### ***References***

Hobson, J. Allan, Pace-Schott, E. and Stickgold, R. (2000), "Dreaming and the Brain: Toward a Cognitive Neuroscience of Conscious States", *Behavioral and Brain Sciences* 23 (6): 793-842

Hobson J.A., (2009) *Nat Rev Neurosci.* 2009 Nov;10(11):803-13. Epub 2009 Oct 1.  
REM sleep and dreaming: towards a theory of protoconsciousness. . PMID: 19794431

Merriman J., (2009) <http://www.neurologyreviews.com/08%20aug/AlteredDreaming.html>

McNamara P., McLaren D., Durso K., (2007), "Representation of the Self in REM and NREM Dreams", *Dreaming*, June ; 17(2): 113–126. doi:10.1037/1053-0797.17.2.113 ; and at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2629609/pdf/nihms53729.pdf>

Rauch B., (2009), "'Natural' and Digital Virtual Realities", *Leonardo Electronic Almanac*, Vol 16 Issue 4 – 5 , [http://www.leonardo.info/LEA/DispersiveAnatomies/DA\\_rauch.pdf](http://www.leonardo.info/LEA/DispersiveAnatomies/DA_rauch.pdf)

Scarone S., (2009) <http://www.esf.org/activities/exploratory-workshops/news/ext-news-singleview/article/new-links-between-dreams-and-psychosis-could-revive-dream-therapy-in-psychiatry-585.html>

Stickgold R.A., Hobson J.A., (1996), "On-line vigilance monitoring with the Nightcap", <http://www.websciences.org/cfemplate/NAPS/archives/indiv.cfm?ID=19960547> or any improved version. Other interesting work using the Nightcap possibly relevant to a useful model for our present research occurs in McNamara (2007) ; NASA results referred to in the main text above are given at [http://lsda.jsc.nasa.gov/scripts/experiment/exper.cfm?exp\\_index=846](http://lsda.jsc.nasa.gov/scripts/experiment/exper.cfm?exp_index=846)

Sutton J., (2008), "Dreaming", <http://philpapers.org/rec/SUTD>

Wargo E., (2009), <http://thenightshirt.com/?p=115>

Yates J. (2007) [http://ttjohn.blogspot.com/2007\\_05\\_01\\_archive.html](http://ttjohn.blogspot.com/2007_05_01_archive.html) , and elsewhere in <http://ttjohn.blogspot.com/>