

# Why lucid dreaming could also be called paradoxical dreaming

## Commentary on “The neurobiology of consciousness: Lucid dreaming wakes up” by J. Allan Hobson

Brigitte Holzinger

Institute for Consciousness and Dream Research, Vienna, Austria

It is not easy to comment on Allan Hobson's article. Ever since I met him over 20 years ago, Allan has been fascinated by this topic and generally any article on lucid dreaming published by Allan Hobson can only be regarded as positive concerning future research on the subject. However, in some issues we have very different views and although there are many points to be made about lucid dreaming and its scientific implications, there are some aspects regarding Allan's article that I feel are very important.

Firstly, I am pleased that Allan uses some of my explanations of lucid dreaming as given facts, for example that lucid dreams can be viewed as paradoxical dreams (Holzinger, 2005, 2007). What I meant by paradoxical in this context is that adding secondary process thinking “Sekundärprozesshaftes Denken” (concept developed by Sigmund Freud) to primary process thinking “Primärprozesshaftes Denken” (Holzinger, 2005, 2007), causes a new state to emerge, that is, at least subjectively, deeper than non lucid dreaming. Allan's theory – if I understood him correctly – is that recognizing the dream state means that wakefulness is being added to dreaming sleep and therefore during lucid dreaming one is closer to waking than non lucid dreaming. Incidentally this concept evolved from an ongoing discussion LaBerge was exposed to many years ago.

Secondly, to me it seems, that lucid dreaming can be better described as an associative state rather than a dissociative state – a point that I feel requires further investigation and discussion (Holzinger, 2007).

Thirdly, of course the new fMRI and EEG-studies about lucid dreaming are very interesting and promising. However, it would make sense to take into account previous studies into the topic, few as they are, and in this vein, I would like to remind my colleagues of a project undertaken by LaBerge and myself where we found the significant difference between lucid and non lucid REM-sleep in the left parietal area (Holzinger, LaBerge, & Levitan, 2006).

Finally, the definition of lucid dreaming is not unambiguous. Particularly for fMRI and EEG-studies on lucid dreaming it is very important not to confuse lucid dreaming with prelucid dreaming. Realizing the dream state is in my opin-

ion “prelucid” and in addition knowing that we are also capable of voluntary decisions is lucid dreaming (1998). In this vein, the definition Allan goes by would be called prelucid and not lucid from our point of view (Holzinger, LaBerge, & Tholey, 1998).

Future studies will shed light into the, yet still unexplored depths of brain activity in lucid REM-sleep and I very much look forward to learn more about this fascinating topic.

### Literature

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Corresponding address:

Dr. Brigitte Holzinger, Institute for Consciousness and Dream Research, A-1180 Vienna, Canongasse 13/1  
E-Mail: [brigitte.holzinger@chello.at](mailto:brigitte.holzinger@chello.at)