The future of lucid dreaming treatment

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

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1. Introduction

Hobson (2009) provides us with a timely and useful review of the history and the latest developments in lucid dreaming research. It seems that lucid dreaming is, although methodologically a challenging phenomenon to study, nevertheless becoming a part of the mainstream cognitive neurosciences. As Hobson's review shows, our understanding of what kinds of states of consciousness and brain areas are involved in the production of lucid dreams has improved considerably.

Hobson (2009) does not discuss the potential practical applications of lucid dreaming. In particular, it has been argued that lucid dreaming may have potential as a therapeutic tool against recurrent nightmares (Green & McCreery, 1994; Halliday, 1988; LaBerge, 1985; LaBerge & Rheingold, 1990; Tholey, 1988). Therefore, the aim of the present commentary is to draw attention to the potentially important application that connects lucid dreams with nightmares: Lucid Dreaming Treatment (LDT).

Nightmares and lucidity are closely related phenomena also because, in some dreamers, highly unpleasant dreams may evoke unprompted lucidity. For people who suffer from recurrent nightmares that lead to sleep problems and increased anxiety, lucidity might prove to be a potentially useful tool that offers a way to control the content of the dream and thereby master the threatening situation within the dream. This could lead to a reduced frequency of nightmares, to less frightening nightmares, and thus alleviate some of the suffering related to recurrent nightmares.

2. Lucid Dreaming Treatment

A nightmare is defined by DSM–IV as an extremely frightening dream resulting in direct awakening and as having a negative impact on different aspects of waking life (American Psychiatric Association, 2000). Research studies have investigated the effects of LDT to reduce nightmare frequency. The two key components of the treatment are, first, learning to use cues that help the dreamer to become lucid during nightmares and, second, learning what one can do there after lucidity is reached. The participants in LDT are taught different lucid dreaming induction techniques, such as questioning the nature of the environment 'Is this real or am I dreaming?' and to intentionally recognize the frightening scenery of their nightmare to be a dream. The participants then choose some feature or content of the dream that they will attempt to change when lucid, so that the distressing nightmare will be redirected to a different track with an alternative (and less fearsome) ending.

Converging results from LDT studies suggest that lucid dreaming treatment is in fact effective for reducing nightmares. Several of the participants in such studies have shown a decreased frequency of nightmares (Spoormaker & van den Bout, 2006; Spoormaker, van den Bout & Meijer, 2003; Zadra & Pihl, 1997) and for some the treatment also contributed to a slightly improved subjective sleep quality (Spoormaker et al., 2003). However, some participants did experience fewer nightmares after engaging in LDT even though they had not become lucid at all and consequently could not have lucidly altered the content of their dreams. This suggests that the mere idea or feeling, necessarily included in LDT, of being potentially able to control and master one's nightmares might play an equally vital role for reducing nightmares (Spoormaker & van den Bout, 2006; Spoormaker et al., 2003; Zadra & Pihl, 1997). Perhaps the feeling of potential control reduces anxiety as such, and the reduced levels of anxiety lead to a lesser frequency of nightmares.

3. Nightmares in Posttraumatic Stress Disorder

Posttraumatic Stress Disorder (PTSD) is an anxiety disorder which may develop from exposure to a life-threatening or otherwise traumatizing event. The symptoms of PTSD are collected under three clusters, where one cluster consists of intrusion and persistent recollection of the traumatic event, including nightmares. Posttraumatic nightmares are defined by the cluster of symptoms related to the traumatizing event and are thus defined as recurring nightmares of the event (American Psychiatric Association, 2000). Research has shown that posttraumatic nightmares are among the most common symptoms in PTSD patients: up to 60-80% of PTSD patients suffer from them.

Treating PTSD as such does not necessarily reduce the frequency of nightmares (Spoormaker, 2008). PTSD and nightmares may in fact become intertwined in such a manner that nightmares strengthen PTSD symptoms and PTSD in turn causes nightmares. Disturbed sleep and nightmares

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may in fact be a risk factor for developing and maintaining PTSD (Mellman & Hipolito, 2006). Spoormaker (2008) suggests that more attention should be paid to the PTSD nightmares as such, independently of the other PTSD symptoms, because the nightmares are not just a secondary symptom of PTSD but instead could play a central part of the progress of PTSD. Furthermore, posttraumatic nightmares may develop into a disorder of its own.

LDT could turn out to be an effective supplement to the treatment of PTSD, but so far there are very few studies directly exploring this possibility. If the posttraumatic nightmares increase the patient's general levels of anxiety and fear, and remind him or her vividly of the original traumatic event every night, then the nightmares might prove to play an important role in enhancing and prolonging the other PTSD symptoms during wakefulness. Conversely, treating the PTSD nightmares successfully (with e.g. LDT) might reduce the other PTSD symptoms considerably.

A study by Spoormaker and van den Bout (2006) made an attempt to treat PTSD patients and other chronic nightmare sufferes with LDT. However, in this study no significant changes of PTSD severity or the subjective quality of sleep were found. This failure may have been due to the low baseline for PTSD symptom severity (Spoormaker & van den Bout, 2006) and to the relatively brief intervention that failed to lead to a high frequency of lucidity within the participants. Furthermore, only a few of the participants suffered from posttraumatic nightmares, and only one participant was actually diagnosed with PTSD. Therefore, on the basis of this single study it is premature to draw any final conclusions on the effectiveness of LDT on PTSD. Rather it is an encouragement for future research to investigate the effect of LDT on PTSD with larger groups of diagnosed PTSD patients and by using more intense lucidity interventions and longer follow-up of the effects of LDT on the participants.

4. Fear: A Key Component

According to DSM-IV, fear is a key component of nightmares. DSM–IV (American Psychiatric Association, 2000), describes fear as one of the leading features of PTSD, too. In this case fear refers both to the feeling of fear during the original traumatic event and in relation to symptoms of avoidance as everything associable with the actual events evokes the immense feeling of fear. For PTSD patients the content of their nightmares are typically reflecting the original traumatic events quite directly. At the emotional level this means that the intense feelings of fear that were originally experienced will be re-experienced every time the PTSD related nightmares occur.

Incidentally, recent research has shown that REM sleep strengthens especially negative emotional memories even in normal subjects (Payne, Stickgold, Swanberg & Kensinger, 2008) and that threatening events are very common in the dreams of nontraumatized subjects, too (Valli & Revonsuo, 2009). Thus, PTSD nightmares may be interpreted as the over-activation of a dream generation mechanism whose biological function is to preserve, strengthen, and rehearse survival-related memories and thereby enhance the probability of survival of the organism (Revonsuo, 2000).

The fear experienced by the PTSD nightmare sufferer may thus have its origin in over-activated emotional mechanisms that merely try to carry out their biological function. Lucid dreaming allows the dreamer to take control of the dream. Knowing that it is possible to master one's nightmares instead of being a helpless victim possibly contributes to the reduction of nightmares with LDT.

More and better studies would be needed to establish whether utilizing LDT as a treatment for posttraumatic nightmares can actually reduce nightmare frequency and aid the patient to master their fear in the nightmares. If LDT is found effective against nightmares, it might also be effective in reducing the fear associated with the original traumatic event in waking life. This would make LDT a useful supplement in the treatment of PTSD in general.

5. Conclusion

Although only little published research has been dedicated to the investigation of Lucid Dreaming Treatment, this research has presented preliminary and promising results, suggesting that LDT is effective in reducing nightmares. The reduction of nightmare frequency may consequently lead to better life quality during wakefulness. Earlier studies show that nightmares are not only a significant component of PTSD symptoms but that they also can develop into a disorder of their own. This further underscores the need to find effective treatments for chronic nightmares. LDT shows promising potential for the reduction of nightmare frequency, but its effectiveness is in need of substantial future exploration and validation before LDT might become more widely applied in the appropriate patient populations. In future studies, the effectiveness of LDT should be compared to other cognitive-restructuring techniques: larger sample sizes should be used and the intensity and length of the lucidity intervention should be substantially increased.

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