

Critical Concepts in Dream Research: Cognition and Consciousness

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Abstract One common misunderstanding among the public at large is that they believe they have the power to influence lucid dreams. Due to this misunderstanding, this study examined critical terms for studying lucid and non-lucid dreaming, such as consciousness, cognition, and volition. It was discovered that accurate recollection and precise reality monitoring processes are necessary for dream awareness. The study also discovered that creating lucidity disturbs sleep, which is required for emotion control and memory consolidation, which may offset the advantages of lucid dreaming. These results suggest that sleep disruption is a frequent adverse effect of LD's unique regulatory mechanism.

Keywords Lucid Dreams, Consciousness, Cognition, and Volition

1. Introduction

Although lucid dreaming (LD) refers to being conscious during a dream, the general public often misunderstands this to mean that they may influence the details of their dreams. This misperception reflects other common misconceptions regarding dreaming, some of which this post will attempt to dispel (Beck 6). Furthermore, this article aspires to define fundamental concepts in studying lucid and non-lucid dreaming, including but not limited to volition, cognition, and consciousness. Although there may be some apparent overlap, they are grounded in distinct mental processes and unique life experiences.

2. Dreaming

Essentially, dreaming is the act of remembering what went through one's head while they were asleep. This all-encompassing description acknowledges the diversity of dream structure, acknowledging that dreams might be short, non-narrative, thought-like and involve essential sensory-perceptual experiences like emotions rather than elaborate plots or actions (Benghanem et al. 7). Since people cannot accurately record what they do when asleep, there is no independent validation of individual experiences, this further highlights the need for memory in accessing past events. Rapid eye movement (REM) sleep provides the conditions most typical of dreams. This includes bizarreness,

clearer dream recall, emotion, and probably hyperassociativity, in which several distinct memory sources and images can be experienced simultaneously. Due to this, some academics use REM sleep and "dreaming" interchangeably.

However, since it is simple to sample dreams during non-REM states, and REM can occur even in the absence of dreaming, it is crucial to define the parameters of dreaming in terms of each scientific inquiry. If, for example, when interested in comparing levels of cognition and consciousness across different stages of sleep, or even between sleep and wake, mental content or mentation might be better than a dream to describe the phenomena of interest (Horton 8). When investigating characteristics like emotional intensity or report length, researchers must specify our method to determine whether sleep memory recall or the underlying features of a conscious state, such as neurological correlates, should be prioritized.

Accurate reality monitoring procedures and objective recall are required for dreaming awareness. Lack of ability to keep control of the natural world while sleeping makes lucid dreams unusual and fascinating. However, abnormal neural profiles are engaged to activate the frontal lobes to the degree necessary for reliable reality monitoring. Since transparency is rare and aberrant, it probably does not reflect typical thought and awareness when sleeping. This is especially true when considering the significant training required to produce the proper conditions for clarity to emerge (Konkoly et al. 9). Nevertheless, LD may be consistently quantified in a laboratory by having trained volunteers make frequent eye movements while lucid. This is because it is acknowledged that LD may reveal insights into the nature of consciousness, albeit in a less natural setting than would be found in the wild.

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3. The Elements of Cognition and Consciousness

Since sleep lucidity requires enhanced metacognitive activity, defining the meaning when discussing thinking while awake and asleep is essential, cognition is the capacity and capability to function, in this case, while dreaming, in particular, are the encoding, activation, and reactivation of memories and experiences, both new and old (Paller et al. 9). Some of these capacities are so fast that they are automatic and work outside our awareness; this makes them challenging to research at any moment, whether awake or asleep.

Consequently, studying the brain correlates of such behavior may seem like a concrete goal for researchers, especially if they can give evidence for the active presence of such correlates. Instead of only investigating activations without considering functional relevance, cognitive scientists should explain the function of such processes, for example, sleep-dependent memory consolidation. The Continuity Hypothesis has been the primary framework for investigating the relationship between dreaming and other behaviors (Zhao et al. 5). These behaviors include personality traits, moods, or the success with which one subsequently completes cognitive tasks like problem-solving, insight, creativity, composition, or recall.

Research into dreaming's cognitive and metacognitive processes has shown that it differs from waking cognition in only a few fundamental areas, with reality monitoring being one of these. In particular, since dreamers are typically unable to tell whether or not an external source is generating their internal mental experience, the dream world can feel quite real (Beck 2). Only those with LD are conscious during their dreams. In contrast, this heightened metacognitive awareness often rouses the dreamer and brings them out of their slumber.

Despite some similarities to cognition, the conscious experience of understanding whether an experience is inwardly or outwards directed may be described differently. Consciousness may allude to sleep mentation's fluidity, continuity through time, distinguishing qualities or characters, and more holistic mental content. For example, it might be observed that although REM-sampled thoughts are often odd, story-like, and full of activity, non-REM mentation tends to be thought-like and concise, incorporating day residues and references to real-life (Horton 7). Overarching consciousness is more descriptive, but these descriptions of sleep mentation may reflect underlying cognitive processes, including memory activation and likely building memory consolidation processes. The cognitive concerns are functional and may be measured in terms of function, such as the degree of activation, which may include unconscious characteristics at the time of experience.

A lucid dreamer's state of mind may involve the shock of understanding they are dreaming and the clarity of recalling

the dream itself. In most cases, this indicates elevated levels of neurocognitive function. Accurate reality monitoring, metacognition, self-awareness, and usually arousal are all reflected in the underlying cognition or hypothetical function. As a bonus, some LD research suggests that lucid dreamers may continue to improve their control over their activities in the dream world after they first reach clarity. Several researchers set out to do just that, rather than focusing on lucidity in definition, by observing it in more realistic or chance situations (Paller et al. 9). Studies that conflate the ideas of lucidity and control miss the mark since lucid experiences frequently happen in the natural world, whereas controlled ones are exceptional and man-made. Scholars should proceed with caution when extrapolating the profile of mental content from lucid experiences to the nature of consciousness and cognition when using artificial control-induction techniques.

Compared to dreaming, which presumably takes place the whole time a person is asleep, LD is highly unusual. Lucid or controlled experiences, such as practicing habits or resisting hazards while asleep, can be beneficial, but they are fleeting and frequently estimated by self-report or retroactive methods (Benghanem et al. 1). The benefits of lucid dreaming may be outweighed by the fact that producing lucidity disrupts sleep, which is necessary for emotion regulation and memory consolidation.

4. Control

The Researchers attempting to operationalize lucidity would do well to distinguish between conscious dream control and merely being aware of dreaming. The term "control" should be carefully defined, with one possible interpretation being the act of deciding to alter one's experience (Zhao et al. 3). The control appears to require a specific mental makeup at first glance, but awareness of control may emerge during recall rather than during the experience itself. Scholars need to be careful to distinguish any additional explanatory information offered to a dream report at the time of reporting it from the original experience itself.

It is essential to exercise caution when advising participants to try to regulate their dreams, as doing so increases sleep disturbances through awakenings and, because controlling dream content is unnatural, it may limit the activation of memory sources and emotions that may underlie sleep-dependent memory consolidation and emotion regulation processes. The potential benefits of reducing distress from terrifying dreams may only outweigh the likely negative consequences of changing sleep structure and physiology (Benghanem et al. 10). Through restricting the opportunity for "offline" processing, in the case of nightmares causing substantive distress, most typically in people living with posttraumatic stress disorder.

On those few times when lucid dreaming persists without rousing the dreamer, the dreamer makes an effort to either

make sense of the surreal events unfolding before them or exert some degree of control over the dream itself. When it comes to LD, though, the latter can be taught. The growing popularity of mindfulness illustrates how similar activities practiced while awake can help some people develop a keener awareness of their ordinarily unconscious habits.

Considering that people spend so much less time awake than dreaming, it's surprising that LD has garnered so much attention (Horton 6). What's more, exploring the connection between dreaming and consciousness is intriguing because it can provide new details about the structure and function of the mind. The activation, fragmentation, and re-organization of memory sources as part of sleep-dependent memory consolidation processes may be better understood if we consider the bizarreness of dreams, which is characteristic of REM mentation and likely results, at least in part, from hyperassociativity of distinct memory sources during sleep. However, lucidity is uncommon and probably cannot provide as much wisdom as it is expected.

5. Discussion

In LD, "control" is essentially abnormal and interferes with sleep. In either regular or atypical cognition, controlled dreams seldom occur on their own. Therefore, researchers should have the integrity to take into account how studies of control may affect both the subjects who are involved in such studies and the general public who may be drawn to the concept of directing their dreams. There is a responsibility to communicate that we should not control, control, but rather encourage the advantages of getting enough sleep (Walker, 2019), to allow for the possibility of dreaming.

However, it is crucial to take into account if LD could be useful for adaptation, particularly when it comes to processing emotions and/or when the prevalence of LD is associated with diseases. In addition, LD may provide insights into the nature of dreaming, primarily by including the dreamer throughout the dream rather than simply during recollection (Zink and Pietrowski, 2015).

6. Conclusions

Sleep disruption is a common side effect of LD's unique control system. Rarely do lucid dreams occur without conscious effort in either standard or abnormal thought processes. Scholars should have the honesty to think about how their studies of control might affect the population at large, including those who might be drawn to the idea of taking control of their dreams. Our responsibility is to get over the message that we should give them the space to

dream by encouraging them enough rest. However, when the prevalence of LD coincides with diseases, it is vital to consider the possibility that it may have adaptive significance, like emotion processing. By actively immersing the dreamer during the dream itself rather than merely afterward during recollection, LD may potentially reveal insights into the nature of dreaming.

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REFERENCES

- [1] Beck, Aaron T. "A 60-Year Evolution of Cognitive Theory and Therapy." *Perspectives on Psychological Science*, vol. 14, no. 1, 2019, pp. 16–20., <https://doi.org/10.1177/1745691618804187>.
- [2] Benghanem, Sarah, et al. "Brainstem Dysfunction in Critically Ill Patients." *Critical Care*, vol. 24, no. 1, 2020, <https://doi.org/10.1186/s13054-019-2718-9>.
- [3] Horton, Caroline L. "Key Concepts in Dream Research: Cognition and Consciousness Are Inherently Linked, but Do Not Control 'Control'!" *Frontiers in Human Neuroscience*, vol. 14, 2020, <https://doi.org/10.3389/fnhum.2020.00259>.
- [4] Konkoly, Karen R., et al. "Real-Time Dialogue between Experimenters and Dreamers during Rem Sleep." *Current Biology*, vol. 31, no. 7, 2021, <https://doi.org/10.1016/j.cub.2021.01.026>.
- [5] Paller, Ken A., et al. "Memory and Sleep: How Sleep Cognition Can Change the Waking Mind for the Better." *Annual Review of Psychology*, vol. 72, no. 1, 2021, pp. 123–150., <https://doi.org/10.1146/annurev-psych-010419-050815>.
- [6] Zhao, Tong, et al. "Consciousness: New Concepts and Neural Networks." *Frontiers in Cellular Neuroscience*, vol. 13, 2019, <https://doi.org/10.3389/fncel.2019.00302>.