

Required time for cognitive and motor activities in lucid dreams

Results:

In this project the relationship between subjectively estimated time in REM lucid dreams and real time has been studied. In general, earlier studies on dream research showed a rather strong correlation between the duration in dreams and wakefulness. However, for lucid dreaming we found that performing squads took lucid dreamers more time than in the waking state while for counting the same participants showed no differences between dreaming and wakefulness. To find out if the task modality, the task length or the task complexity require longer times in lucid dreams than in wakefulness three experiments were conducted. In experiment 1 and 2, lucid dreamers spent two to three non-consecutive nights in the sleep laboratory with PSG recording and were asked to either count from 1-10, 1-20 and 1-30 or walk 10, 20 or 30 steps in wakefulness and in their lucid dreams. While dreaming they marked onset of lucidity as well as beginning and end of the counting task with a Left-Right-Left-Right eye movement and reported their dreams after being awakened. In the third experiment, participants performed an exercise involving gymnastics elements such as various jumps and a roll. As a general result we found – as in the study before – that performing a task in the lucid dream requires more time than in wakefulness. This tendency was found for all three tasks. However, there was no difference for the task modality (counting vs. motor task). Also the relative time for the different lengths of the tasks showed no difference. And finally, the more complex motor task (gymnastic routine) did not require more time in lucid dreams than the simple motor task.

Published Works:

Erlacher, D., Schädlich, M., Stumbrys, T., & Schredl, M. (2014). Time for actions in lucid dreams: effects of task modality, length, and complexity. *Frontiers in Psychology*, 4: 1013. doi: 10.3389/fpsyg.2013.01013

Erlacher, D., & Chapin, H. (2010). Lucid dreaming: Neural virtual reality as a mechanism for performance enhancement. *International Journal of Dream Research*, 3(1), 7-10. doi: 10.11588/ijodr.2010.1.588

Area(s) of interest:

Sleep and dream research, motor learning, consciousness

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