

Probing Question: What is a lucid dream?

August 26 2010, By Nick Bascom



Have you ever had a dream that just didn't feel like a dream -- where, like Alice in Wonderland, you had trouble telling fiction from reality? Perhaps you even felt like you had control over what was happening, as if you were directing a film produced entirely in your imagination. If so, you most likely experienced what sleep scientists like Edward Bixler call a "lucid dream."

Bixler, a professor of psychiatry at Penn State Milton S. Hershey Medical Center who specializes in the [electrophysiology](#) of [sleep](#) and sleep disorders, says lucid dreams occur "when a person recognizes he or she is dreaming while in a dreaming state and often manipulates events within the dream." This is different from "dream recall," simply remembering a dream after you wake up. In order to distinguish between these states, says Bixler, it's important to understand the two basic stages

of sleep: rapid eye movement, or REM; and non-rapid eye movement, or NREM. [REM sleep](#) is considered deep sleep and only accounts for about a quarter of sleep time. NREM is the longer, lighter stage of sleep.

Although it was once believed that dreaming could take place only during REM sleep, recent studies suggest otherwise. Subjects awakened from NREM sleep often recall still images from their dreams, explains Bixler, but in order to dream in “live action,” a sleeper must reach the REM stage. Since all lucid dreams involve some sort of action, he believes that lucid dreams must be an extension of REM sleep.

Ultimately, what separates lucid dreams from routine REM sleep may lie in the physiology of the brain, said Bixler. During NREM sleep, the cerebral cortex loses its ability to associate with other parts of the brain. Once a dreamer reaches REM sleep, however, the cortex becomes active again and begins making connections with other areas of the brain. According to Bixler, REM sleep is also called “paradoxical sleep,” because the body is at rest but [brain activity](#) resembles that of a waking subject. One part of the cortex, however, the dorsolateral prefrontal cortex, remains dormant. Intriguingly, during lucid dreaming, this half-dollar size region located to the fore of the brain’s left hemisphere, becomes active. Sleep scientists therefore think it may be linked to the sense of self-awareness experienced during lucid dreaming.

It’s not known what stimulates this part of the brain, but people have tried many things to induce a lucid dream, including yogic meditation, supplements, food combinations and mantras. A better approach, Bixler suggests, might be to focus on improving dream recall, in the hopes that it might, in turn, raise the chances of lucid dreaming.

Why try so hard to have one? Lucid dreaming is believed by some to be therapeutic for psychological maladies including depression. Says Bixler, these dreams feel so vivid and self-guided, they can create a sense of

empowerment -- a feeling of control that can be carried into the dreamer's waking life.

As Alice said about her time down the rabbit hole, "Curiouser and curiouser."

More information: Edward Bixler is professor of psychiatry and vice chair of research at the Penn State Hershey College of Medicine.

Provided by Pennsylvania State University

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