

**Proceedings from the Second Annual Lucid Dreaming Symposium
Session 1: What is a Lucid Dream: Psychological and Physiological Considerations**

Flying Dreams and Lucidity: An Empirical Study of their Relationship.

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A common observation in the lucidity literature is an association between lucid dreams and flying dreams. In Van Eeden's paper in which he introduced the term "lucid dream", he wrote, "Flying or floating in all forms of dreams... is generally an indication that lucid dreams are coming" (Van Eeden, 1913, p. 449). Patricia Garfield also noticed that flying dreams tended to occur in close proximity to lucid dreams and suggested that one can make use of this relationship to cultivate lucidity: "Induce dreams of flying and you are on your way to lucid dreams," she wrote (Garfield, 1974, p. 133).

Celia Green (1968) reported that all her lucid dreamers refer to flying dreams, several of them describing that the flying prompted lucidity, while one intentionally used the occurrence of lucidity to initiate flight. Lucid dreams accounts in LaBerge's (1985) and Sparrow's (1976) books also seem to have a high rate of flying.

The purpose of the present study was to determine in a general college population of dreamers: 1) what was the rate of lucid and flying dreams, 2) whether they occurred in some relationship to each other, 3) if they were related, whether the two elements occurred to the same dreamers, on the same nights, and/or within the same dreams, and 4) when they occurred in the same dream, which element preceded the other.

A large number of dreams (1180) compiled from three previous experiments were examined. These experiments had involved asking fifty-six volunteer undergraduates to keep dream diaries for periods of time ranging from two to six weeks. Two readers rated the dreams as to whether they contained content of flying or floating, and fell into three lucidity related categories. The first of these was the "pre-lucid" dream which was defined as any dream in which the dreamer showed some faint awareness of the dream state but did not become fully lucid. An example of a dream placed in this content category was one in which the dreamer was watching an elaborate Kabuki theater performance and at one point remarked, "I thought I had better leave and go back to my dorm room to write all this down in my journal for the experimenter, but instead I stayed and watched the rest of the play."

The second lucidity-related category were false awakenings. These not only imply a covert acknowledgment of the sleep state, but they have been reported by lucid dreamers from Van Eeden on to have an intimate relationship with lucidity. The third and final category was dreaming about sleep. This is a mirror image of the false awakening. I could not find any discussion of dreams of sleeping in adults. The only accounts of dreams of sleeping I have found in previous literature is Foulkes' study with children (1983) in which he found this was a content category present only in 3-5 year olds. The accounts from his children are simply of sleeping in another place such as "I dreamed I

was sleeping at a cocoa stand" and "I dreamed I was in the bathtub asleep." Since these bypass of dreams were occurring occasionally in my sample so I made them a separate content category. An example of one of these is a rather long dream which concludes as follows:

...At that time I approached an old Indian contortionist who lay on his back in a lioness' cage sleeping. I petted the lioness and lightly stroked the Indian man's face while they slept. I awoke the Indian man accidentally and he requested that I stay with him, so I did. I fell asleep with my hand lying on his chest and my arms around his shoulders. I slept peacefully for a long time.

All totaled, there were 11 dreams of flying or floating from 9 subjects. That's almost exactly 1% of the dreams from 16% of the subjects. The only previous study I could find that gave a figure for flying dreams in a general population was one by Fisher (1928) with children. He found 3% of dream accounts were of flying; he remarked that he believed these dreams to be more common for children than adults, which my data would support. Brink et al. (1977) examined the cumulative lifetime incidence of flying dreams and found that 30% of young adults reported having had at least one such dream.

Moving to lucidity-related categories, there were 7 lucid dreams, 16 pre-lucid dreams, 8 false awakenings and 4 dreams of sleeping from 10 subjects. That is a bit less than 1% for fully lucid dreams but about 4% counting the other 3 lucidity-related categories from 19% of the subjects. Even though I started with a rather large pool of dreams, this became a very small number in terms of these specialized content categories. This small number narrowed my statistical choices. Therefore I did T-tests looking at whether, for each of these content categories, those subjects with a dream in that category had a higher rate of other target category than the rest of the subjects. I used $p < .05$ as a criteria for significance level.

Six of these ten subjects with lucidity-related dreams were among those also dreaming of flying or floating. This was a statistically greater than chance overlap between the subjects to whom these categories of dreams occurred. There was also a significant overlap of flying dreams with the other three lucidity related categories combined; separately the trend was for flying to overlap each of them, but they did not achieve statistical significance. These findings clearly support the basic premise of a relationship between flying dreams and lucidity.

There was also a significant and even larger overlap between lucid dreamers and subjects with the other three lucidity-related content categories combined. This does seem to justify the term pre-lucid, to support the longstanding assertion of a close relationship between false awakenings and lucidity, and to suggest the new "dreams of sleeping" category has a similarly strong relationship to lucidity.

For the subjects who had both flying and lucidity-related dreams, there was a trend toward a greater overlap of the nights on which they occurred but it did not achieve significance. On a given night, they were slightly likelier to occur within the same dream. In the dreams in which both flying and lucidity occurred, the lucid state consistently

preceded the flight.

These results support most of the suggestions about relationships between lucidity and flying dreams except one: this last finding lends no support to the idea that the act of flying will commonly trigger lucidity. It obviously tends to prompt lucidity for a few individuals who have reported so in the previous literature and may for those who have such an expectation from reading those accounts. However for most, the pattern is clearly that flying is a very pleasurable act that comes to mind once they realize they are dreaming and can defy the usual laws of nature.

There are several ways to examine this empirical relationship between flying and lucid dreams for what its causes and significance may. First, in terms of what psychological themes or interpretations these types of dreams may share. Freud wrote:

...In dreams the wish to be able to fly is to be understood as nothing else than a longing to be capable of sexual performance. This is an early infantile wish... Whenever children feel in the course of their sexual researches that in the providence which is so mysterious but nevertheless so important there is something wonderful of which adults are capable but which they are forbidden to know of and do, they are filled with a violent wish to be able to do it, and they dream of it in the form of flying, or they prepare this disguise of their wish to be used in their later flying dreams.

Other analytic interpretations such as Krishnan et al. (in press) or Jane Lewis, in a talk here at the ASD conference earlier this week, stress the metaphor for "Flying away" as an escape.

Jung interpreted flying dreams in terms of what he called "inflation"-- euphoria and grandiosity--and he thought they warned of manic trends. Other interpretations stress this commonly euphoric tone more positively and see flying as symbolic of freedom and mastery.

All of these interpretations resonate with characteristics of lucid dreams. Lucid dreams are frequently euphoric, a sense of escaping usual laws of nature is often stressed, and an emphasis on feeling very free and a sense of mastery are typical. As Patricia Garfield (1979) and Stephen LaBerge (1985) have both emphasized in their books, there seems to be a high rate of sexual content in lucid dreams. So we might think of them as filling similar psychological needs as flying dreams.

Then there is the possibility that lucid and flying dreams share some distinctive physiological state, which would probably involve a higher level of arousal, denser REM's and/or more overlap of activation of waking cognitive patterns superimposed on the REM state.

Suggestions that flying dreams are induced by some greater than usual consciousness of the body during REM have been around a while. Havelock Ellis, in his 1913 book on dreams, suggested that sensations of flying are initiated by awareness of the lack of pressure on the soles of the feet during high activation in balance and movement centers. Scherner (1861) believed the rising and falling of the chest in breathing was the stimulus for flying dreams. There were some hints of more awareness

of incongruent sensory information about the body in all categories of dreams in my study. For example, one of the dreams in the sleeping category began: "I dreamed I was walking in my sleep," and proceeded to describe the dreamer's body moving in ways she could not control and repeatedly being unable to remain standing and "melting" and sliding down walls, while friends tried to get her back to bed. So it may be the greater awareness in flying dreams shares something in common physiologically with that manifested in the lucid dream.

Another fact to suggest a physiological link is that a very high incidence of flying dreams occurs in patients with narcolepsy. Sours (1963) and many of the other major reviews of dreams of narcoleptics remark on how striking this content category is, and in a study by Krishnan et al. (in press) they found that 100% of his narcoleptic patients reported flying dreams and that for most of them it was a very frequently recurring dream. Narcolepsy is basically a disorder in which REM overlaps waking consciousness in terms of many of the symptoms, and I think it is reasonable to talk about lucidity as an unusual case of overlap of waking-type reflection and some secondary process thought with REM's typical level of hallucinatory imagery and primary process thinking. Also narcoleptics are reported to have REM periods of unusual density of eye movements and in a recent examination of the physiological concomitants of lucid dreams, Stephen LaBerge and his colleagues (1986) found them to be likeliest to occur during the parts of REM periods characterized by the densest eye movements and other indicators of greater CNS activation.

A last point I want to mention in examining the relationship of lucidity and flying is that it may not be entirely specific to flying dreams. Instead it may be that lucid dreamers have a higher rate of vivid, unusual, and surreal content in their dreams in general of which flying is only one example. Their high rate of dreams of sleeping would also suggest that. I also found them overrepresented in the parallel study on the same data which I presented earlier this week. They were many of the same subjects who reported dreams of dying; the example I included in that talk of the dreamer being shot in the face and then enjoying dying came from the subject with the most lucid dreams. It may be that there are all kinds of unusual dream categories likelier for lucid dreamers although I believe there is probably some special relationship to flying dreams such as the psychological interpretations and physiological factors which I have mentioned.

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