1001 Nights Exploring Lucid Dreaming

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Note: References below are to the issues of NightLight (NL) in which the experiment (X) and the update (U) appeared.

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A THOUSAND AND ONE NIGHTS OF EXPLORING LUCID DREAMING

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The NightLight experiments have brought forth important knowledge about lucid dreaming. An overview of the research to date may help provide a gestalt of current understanding of the lucid dream state and stimulate further inquiry.

1. INDUCING LUCID DREAMS [X: NL 1(1); U: NL 1(3)]

The first experiment, published in the first issue of NightLight, cut straight to the core of our questions. It was an examination of the effectiveness of a few lucid dream induction techniques that we had reason to believe were helpful. Subjects collected information on their lucid dream frequencies during four conditions. In the first, they practiced no induction techniques. In the second, they used a form of auto-suggestion. Before bed, they wrote on a piece of paper, "Tonight I will have a lucid dream," and signed the paper. This condition was intended as sort of control, in which people were attempting to have lucid dreams but with a technique that we did not believe to be effective. The third condition involved Reality Testing, asking several times a day, "Am I dreaming," testing the answer and then visualizing what is like to be dreaming and become lucid. The technique for the fourth condition was MILD, the Mnemonic Induction of Lucid Dreams, developed by Stephen LaBerge and used by him to learn to have lucid dreams at will.

Our expectation was that Reality Testing and MILD would be more effective than no technique or auto-suggestion. The results upheld this hypothesis. The finding was clear-cut for MILD, but less so for Reality Testing, probably only because we did not have an adequate number of participants for solid determinations. Each participant tried one technique per week. While practicing Reality Testing, 29 percent of people had at least one lucid dream. In the MILD condition, 26 percent had lucid dreams. These numbers compare favorably to the 20 percent of participants reporting lucid dreams during the "control" conditions.

Additionally, Reality Testing proved to be more effective when practiced more often during a day. The half of the group that did the most Reality

Tests per day (five times or more) had twice as many lucid dreams per dream recalled (0.64) than the half of the group that did the least (two times per day or fewer).

2. DISCOVERING DREAMSIGNS [X: NL 1(2); U: NL 1(4)]

The concept of dreamsigns developed during the writing of Exploring the World of Lucid Dreaming (LaBerge & Rheingold, Ballantine, 1990), as a term to capture the character of the anomalous events common in dreams that often stimulate people to realize that they are dreaming. A definition of dreamsign is, "a peculiar event or object in a dream that can be used as an indicator that you are dreaming."

The first investigation with dreamsigns was designed to classify and catalog which peculiarities were most common, and most likely to lead to the increased reflectiveness necessary for lucidity. The preparation involved reading hundreds of lucid dreams and selecting the events that preceded or precipitated lucidity. This myriad of oddities formed twenty preliminary groupings. The experiment asked participants to collect their own dreamsigns, categorize them according to the preliminary groupings, and rate them on a scale indicating how much the dreamer had wondered about the dreamsign. They also noted any occasions of lucidity.

From 44 people, we collected 227 dreams, containing 964 dreamsigns. Many types of analysis led to a refinement of the catalog of dreamsigns, employed in a later NightLight experiment (see "Watching for Dreamsigns," below). One analysis of particular relevance sorted out the dreamsigns that were both very common in dreams, and very likely to precede lucidity. These are presented in Table 1.

Table 1. DREAMSIGN CATEGORIES

EGO...			
Form	1.5%*	10**	Dreamer is in a different body than usual, or the body is distorted.
Role	2.6%	8	Dreamer is playing a role of other than his or her normal waking self.
Action	11.6%	1	Dreamer does something unlikely or impossible in waking life.
Perception	1.7%	6	Dreamer is able to see, hear, feel things in a different way than usual.
Thought	5.3%	1	Dreamer has a dreamlike thought or alters the dream events with thought.
Emotion	10.8%	3	Dreamer experiences unusually intense emotions.
Sexual	1.2%	8	Dreamer feels sexually aroused or feels sensations in the erogenous area.
Out of Body	0.2%	9	Dreamer feels sensations as if

"out of body".

Body Sense	2.0%	5	Dreamer feels an unusual sensation on or in his or her body.
Paralysis	1.0%	7	Dreamer feels unable to move.

CHARACTER...

Form	5.7%	2	A dream person is different than normal, oddly formed, or strangely dressed.
Role	2.2%	8	A dream person is playing a role different than in waking life.
Action	13.7%	4	A dream person does something unlikely or impossible in waking life.
Place	6.7%	7	A dream person is in a place where he or she is unlikely to be in waking life.

OBJECT...

Form	9.1%	7	A dream thing is strangely built, or doesn't exist in waking life.
Action	4.6%	2	A dream thing does something unlikely or impossible in waking life.
Place	4.4%	7	A dream thing is in a place where it is unlikely to be in waking life.

SETTING...

Form	7.8%	3	The place where the dream occurs is oddly constructed or impossible.
Place	5.4%	10	Dream occurs in a place the dreamer is unlikely to be in waking life.
Time	2.6%	10	Dream occurs either in the past or in some projected future.

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* Percent of the total number of dreamsigns for this category.
** A ranking from 1-10 with lower numbers more frequently occurring as lucidity triggers.

3. PROLONGING LUCID DREAMS [X: NL 1(3); U: NL 2(1)]

Because one of the most common constraints of the achievement of goals in lucid dreams is their brevity, the development of a reliable technique for prolonging lucid dreams would greatly increase the benefits available from the state. This study compared the effectiveness of three types of behavior on dream length.

The experiment was based on the notion that the dreamer can predict when a dream is about to end and be followed by an awakening by noticing that the dream is "fading." This process seems to be typically characterized

by loss of visual image clarity, brightness and dimensionality. However, no systematic investigations of dream fading yet exist, so the reliability and universality of this phenomenon is unknown.

The first lucid dream prolonging method was "spinning," which means twirling around in a dream, like a dancer or a dervish. LaBerge discovered and refined this technique during his doctoral dissertation work on training himself to be a frequent lucid dreamer. His experiences and those of many lucid dreams who have also tried spinning indicated that this technique could be highly effective for postponing awakening. For the experiment, participants were to wait until their lucid dream began to fade and then begin to spin around (while still feeling their dream body) until they were in a dream again or awake.

The other two methods were not suspected dream prolonging techniques. Their purpose was to provide a contrast to spinning, to demonstrate whether or not spinning was actually having an effect on dream length. One method was "going with the flow," meaning continuing, or attempting to continue, whatever action the dreamer had been engaged in when the dream began to fade. This constituted doing nothing different in the dream, and so acted as a neutral control.

The third method had actually been proposed by Dr. Paul Tholey of Germany as a technique for causing awakening from lucid dreams. This was to focus visual attention on a single point in the dream and hold it their until the dream ended. The experiment presented this behavior as another dream prolonging technique, as a way of testing the power of suggestion in the effectiveness of actions meant to prolong dreams, and as a test of the verity of Tholey's idea.

The results derived from this study were provocative, but unfortunately, inconclusive. Not enough people submitted usable data to permit a clear understanding of the information collected, especially regarding differences in frequency of awakening following each of the three conditions. It will be very interesting to repeat this experiment with a larger group of participants.

The data from the 14 who completed the tasks hinted that dreams following spinning and going with the flow were more likely to be lucid than those following focusing on a point (70% vs. 29%). One indication that spinning may be better than the other methods for prolonging dreams appears in the finding that the average word count of dream reports from post-spinning dreams was highest (225 words), followed by going with the flow (176), and focusing on a point (151).

4. WATCHING FOR DREAMSIGNS [X: NL 1(4); U: NL 2(1)]

This experiment used the information collected in the previous

"Discovering Dreamsigns" study to examine the relationship between dreamsign occurrence and lucidity. That study had permitted condensation of the larger 20 class catalog into a more concise list focusing on the characteristics of dreamsigns most relevant for stimulating lucidity. This list is composed of four categories:

* Inner Awareness: Peculiar thoughts, strange emotions, unusual sensations or altered perceptions.

* Action: The dreamer, a dream character, or an object does something unusual or impossible.

* Form: The dreamer's body or another body or object is oddly formed or changes form.

* Context: The setting or situation in a dream is anomalous.

The structure of the experiment asked people to alternate between an induction technique of visualizing becoming lucid in a remembered dream because of noticing a dreamsign and a technique of visualizing becoming lucid without focusing on a dreamsign. No indication arose that either of these techniques was more effective at causing lucid dreams. More data from more people, however, may show a difference.

The interesting result was that people were more likely to become lucid in dreams that contained many dreamsigns. The frequency of Inner Awareness and Action dreamsigns in particular correlated significantly with lucid dreaming frequency.

This finding suggests the possibility that increasing our awareness of dreamsigns might enhance our ability to notice them in our dreams, and hence our chances of becoming lucid. Lucidity Institute courses include exercises for training people to become aware of dreamsign-like events in waking, with the hopes of increasing this awareness in dreams as well. An important target of future research should be the development of effective means of teaching dreamsign awareness.

5. NAPS: THE BEST TIME FOR LUCID DREAMING [X: NL 2(2); U: NL 2(3)]

This experiment marked the beginning of a series of investigations into the timing of efforts for inducing lucid dreams. Both laboratory and home based studies of when lucid dreams happen have shown that they are not evenly distributed throughout sleep time. In full nights of sleep, lucid dreams tend to cluster towards the end of the night, becoming more likely with each REM period of the night. Furthermore, in LaBerge's data on his own lucid dream times, he noted that he was much more likely to achieve lucidity during afternoon naps than during nightly sleep.

The goal of the nap studies is to find out whether naps are generally better than nights for lucid dreaming. If so, then what factors make this true? For example, it could be that a period of wakefulness preceding the attempt to become lucid may stimulate attention on the goal and subsequent success. On the other hand, or perhaps in addition, the condition of the brain and body at the time of day when naps are taken may be optimal for fostering lucidity.

In this study, participants maintained the same total number of hours of sleep, while shifting the last two hours of their nights' sleep to either two or four hours after rising. Thus, in the two hour condition, they were returning to bed at their usual waking time, and in the four hour condition they napped two hours after their usual waking time.

The findings were astonishing. Lucid dreams happened ten times more often in the nap periods than in the nights. Part of this result could arise from the fact that dreams are much more common in the latter hours of sleep. For example, in this study the number of dreams per hour of sleep was four times higher in the naps than the nights. However, the ratio of number of lucid dreams to number of dreams recalled was still three times higher in the nap periods than in the nights. This meant that three out of ten dreams from naps were lucid while one out of ten dreams from nights was. There was some sign that the two hour delayed nap was better for lucid dreaming than the four hour delayed nap, but the data set was too small for this finding to be conclusive.

Such strong results showed that nap-taking was worth a lot of attention as a potentially very powerful lucid dream induction technique. Therefore, napping and other investigations of time of day relationships to lucid dreaming have become a primary focus of NightLight experiments.

6. FIFTEEN MINUTES TO LUCID DREAMING [X: NL 2(1); U: NL 2(4)]

The concept tested here was whether lucid dreaming could be stimulated by brief periods of intense focusing. One of the great challenges of lucid dream induction techniques is remembering to attend to the task. The idea was that perhaps concentrating complete attention in a circumscribed period of time could provide the benefit of periods of lesser attention scattered throughout a day.

The study aimed at finding out whether the fifteen minute focusing notion had any validity. Alas, we still do not know, because participation achieved a nadir with this experiment. Although the procedure did not require that people have lucid dreams to complete it, which always limits participation to those able to induce lucid dreams, only 20 people submitted results. Perhaps it is too much to ask for someone's complete attention for fifteen entire minutes, but that would be a dire analysis of the human condition.

A glimmering of a result appeared in that focusing periods in the evening seemed to have more of an effect on chances of becoming lucid the following night than focusing periods in the morning. However to ascertain that this finding was not due to random statistical fluctuations, similar data from at least 65 more subjects would be necessary.

Because there is little point in conducting experiments if not enough people contribute, we made a strong plea after this for more participants. We encouraged people by offering a very simple experiment, requiring almost no effort. This was "The Dream Clock" (see below).

7. BACK TO THE NAP [X: NL 2(3); U: NL 3(1)]

Continuing where the previous nap study left off, this experiment manipulated the time at which people took the last 90 minutes of their night of sleep and compared those results with what happened when people simply stayed in bed for an extra 90 minutes. One questions was: does it matter when the last 90 minutes of sleep are taken, that is are they as effective if taken at their usual time as when delayed? The other was, could it be that the high number of lucid dreams seen in a delayed nap are the result of sleeping at that time of day, instead of being related to inserting a period of wakefulness into the block of sleep time?

The three conditions were: a. get up 90 minutes early, stay awake 90 minutes, then nap for 90 minutes; b. sleep the usual amount of time, but wake up 90 minutes early and do MILD for five minutes before completing the last 90 minutes of sleep; and, c. sleep the usual amount of time, then wake up to do MILD for five minutes before sleeping an extra 90 minutes. Again, it would have been preferable to have many more participants. Nonetheless, some salient results emerged. Almost 90 percent of the lucid dreams collected occurred in the naps or the last 90 minutes of sleep, and most of these occurred in the delayed nap condition. Twice as many people had lucid dreams in the delayed nap time than in the last ninety minutes of the "normal" night of sleep (no delayed nap or prolonged sleep). These people had three times as many lucid dreams in the delayed nap than in the last 90 minutes of the normal night. Furthermore, an analysis of the number of lucid dreams happening per dream recalled showed that the delayed nap lucid dream frequency was six times higher. So, it seems clear that the delay contributes significantly to success with lucid dreaming.

The data from the prolonged sleep periods ruled out the possibility that simply being in bed 90 minutes after usual rising time is enough to cause lucidity. The last 90 minutes of the long sleep period turned out to be the worst time for lucid dreaming, also characterized by low dream recall. The next goal in the study of napping and lucid dreaming is to

extend this study with many more participants, and to discover when is the best time to take the nap.

8. THE DREAM CLOCK [X: NL 2(4); U: NL 3(2)]

For this study, people were simply to note the times when they awakened in the night, and whether they had just awakened from a dream or a lucid dream. This was part of the effort to discover the relationship between lucid dreaming and biological clock cycles.

Sixty-four people contributed, making a data set of thousands of awakenings. In 79 percent, people had just had a dream. Ninety awakening were from lucid dreams (7.6 percent), meaning that about ten percent of dreams remembered were lucid. That is a very high number! It seems that simply sleeping with the intention to be aware of what is going on during the night, whether one is awake or asleep, is enough to stimulate lucid dreams for many people. Almost 60 percent of the participants had at least one lucid dream during the week in which they were collecting times of awakening.

As for the times, lucid dreams happened on average later in the night than non-lucid dreams, and non-lucid dreams happened later on average than awakenings with no dreams recalled. This corresponds to previous work demonstrating that lucid dreaming probability increases with time of night. In fact, 90 percent all of the lucid dreams in this study occurred after 4 hours of sleep, and fully one half after 6.5 hours of sleep.

This is a very important finding. It clearly implies that, if we assume that lucid dream induction techniques are most effective when applied closest in time to the time when we hope to have a lucid dream, it would be best to focus our efforts as close to the optimal time for lucid dreaming as possible. The "Back to the Nap" experiment also indicated that wakefulness and induction exercises work better when practiced at 6.5 hours into a sleep period than at the beginning of the night.

9. BIOLOGICAL RHYTHMS, THE NASAL CYCLE & DREAMS [X: NL 3(1); U: NL 3(3)]

In studying the relationship of lucid dreaming to the daily cycle of waking and sleeping, it is essential to consider the biological rhythms involved. In addition to the well-known 24 hour circadian cycle there are shorter cycles, called ultradian. One of these appears in the form of shifting dilation of the nostrils. If you hold one nostril closed and breathe through the other, and then switch nostrils, generally you will find that one nostril is easier to breathe through than the other. The change from left to right seems to follow an approximately 90 minute cycle.

Some research has suggested that the nasal cycle may be connected to cycles of activity in the brain and also to cognitive abilities. Furthermore, a shift in nostril dilation can be produced by pressure on a reflex point on the side along line beneath the armpit. Possibly, then, one could effect a change in cognitive activity by deliberately pressing on this point.

In the oldest available references on lucid dream induction, the thousand year old text on Dream Yoga in the Tibetan Buddhist tradition, is the advice to the initiate attempting to achieve a lucid dream that he should sleep "on the right side, as the lion doth." It is possible that the purpose of this posture is to encourage the type of brain activity conducive to lucid dreaming. After all, most of our current knowledge about reflex points on the body is found in ancient yogic texts.

This experiment examined the effect of sleeping posture on chances of lucid dreaming and attempted to assess if nostril laterality bore any relation to posture and lucid dreaming. The results were complex and difficult to interpret, showing that this type of study is probably best done in a laboratory under well controlled conditions. The procedure asked people to note when they awakened in the night, whether they had been dreaming, or lucid dreaming, which nostril was most open and to rate their dreams on several scales. The finding to take home from this study is that indeed, people had three times as many lucid dreams when sleeping on their right sides (as the lion doth?) than when sleeping on their left sides. Back sleeping presents a more complicated picture, also seeming to be better than sleeping on the left, but here we must examine other factors, such as which nostril is open. Further conclusion is deferred until a laboratory study is accomplished.

10. DREAM RE-ENTRY AS A WAY TO LUCID DREAMING [X: NL 3(2); U: NL 3(4)]

There are two primary types of lucid dream. Dream induced lucid dreams (DILDs) occur when the dreamer becomes lucid while involved in an ongoing dream. Wake induced lucid dreams begin when a person enters directly into the dream (and REM sleep) from the waking state with continuity of awareness. The latter kind of lucid dream shares many features with the phenomenon often refereed to as "out of body experiences" (OBEs). Indeed, our theory is that OBEs, like WILDs, most commonly occur during conscious transitions from waking to dreaming, the difference being that in the former dreamers believe themselves awake, while in the latter dreamers know that they are dreaming.

One important reason for connecting WILDs and OBEs is that they share phenomenological features. The experience of vibrations, strange noises, electrical sensations, feelings of weight on the chest and difficulty

breathing, and floating -- sometimes with the sensation of peeling out of the body are common to both. The primary intent of this NightLight experiment was to see whether these sensations could be deliberately evoked by attempting to initiate WILDs, and if so to find their frequency of occurrence. Another purpose was to compare methods of WILD induction. The procedure was carried out in the context of attempts to re-enter dreams, under the assumption that the best time to directly enter the REM state is immediately after having awakened from it.

The first method was counting to sleep. The instructions were to sleep with the intention of noticing awakening from a dream, and upon awakening to begin counting, "One, I'm dreaming; two, I'm dreaming; etc." until asleep. The other method was a body-oriented technique of passing attention around 61 points distributed all around the body in an orderly sequence. Both procedures were based on the principle of maintaining mental vigilance while the body's physiological systems pass into the REM sleep state.

The most striking, and unexpected, result of this experiment was that one out of five attempts to re-enter the dream state resulted in a lucid dream! There were 191 attempts to re-enter dreams (from 30 participants). Sixty-one percent of these attempts were successful, and one third of the re-entered dreams were lucid. Furthermore, two-thirds of the participants reported having a lucid dream as the direct result of the dream re-entry procedure.

Addressing the original purpose of the study, the examination of sensations occurring on the border of waking and dreaming, 62 percent of participants experienced at least one of the phenomena on the questionnaire. These were: paralysis, weight on chest, vibrations, buzzing (or other noises), and floating or sinking. The significance of this is that these weird feelings are not rare or anomalous. Apparently, they can happen to anyone. People often describe their sleep paralysis or OBE experiences as terrifying, perhaps reflecting on their mental health. There is no need for such anxiety. The fascinating transition between the two states of consciousness, the two worlds of waking and dreaming, is nothing to dread, but should provide much interest for researchers of the mind.

11. CREATIVITY IN DREAMS & WAKING LIFE [X: NL 3(3); U: NL 4(1)]

Common knowledge tells us that dreams are weird. In technical language, dreams contain bizarre elements. One question is, are dreams more bizarre than other mental experiences? That is, is their something about the dream state that produces more nonsensical or unordinary associations than such purely mental activities as storytelling, fantasizing, and remembering. Where does lucid dreaming fit into the scheme of things?

There has been some debate among dream scientists about whether dreams are really more bizarre than fantasies. The question is important in that it bears on what is actually happening in the brain in the dream as compared to in waking. This experiment attempted to study these factors, under the guise of examining creative output in various waking mental activities and in lucid and non-lucid dreams. This is the first stage of an ongoing project to analyze the cognitive correlates of dreaming.

The five types of mental experience studied were lucid dreaming. non-lucid dreaming, fantasizing (really daydreaming), storytelling, and remembering. The instructions asked people to write a report of each type of experience. There were some difficulties with the data collection. Much misunderstanding arose regarding the fantasy, with several participants not carefully reading the directions and generating deliberate fantasies rather than capturing spontaneous daydreams, as requested. Furthermore, the memory task was confounded in that it did not ask the people to first remember the event, then report on the memory which would have been parallel to the other tasks.

The clearest result came out of an analysis of the frequency of bizarre elements. The experimenters judged each report, without knowing whether what kind of mental experience it represented, for the occurrence of discontinuities (sudden scene or topic shifts) and inconsistencies (anomalous combinations of events, places, or things). Lucid dreams and dreams both contained more bizarreness than memories or fantasies, as one might expect. The stories collected were stories made up about dreams. They contained as many inconsistencies as dreams, perhaps because people expect inconsistencies in dreams and include them in made-up dreams. In any case, the indication is that more strange things happen in dreams than in waking life. More research will butter more bread.

PLEASE JOIN US IN MAKING THE FUTURE OF LUCID DREAMING.

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