
TESTING THE LIMITS OF DREAM CONTROL: THE LIGHT AND MIRROR EXPERIMENT
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Lucid dreaming offers the promise of enhanced control over dreams. Yet the question remains quite unanswered of how much dream control is possible. The ability to have lucid dreams also makes possible a way to study this issue. After having attained lucidity in a dream, dreamers can choose to carry out predetermined experiments testing their ability to achieve certain goals. In the "Free Fall" issue of NightLight (Vol. 4, No. 4) we asked lucid dreamers to attempt certain tasks in lucid dreams and to report on the outcome. An introduction to the many viewpoints on dream control will put the findings from this study in context.

WAYS OF CONTROLLING

The definition of "control" used here is "the ability to determine or influence the course of events." This means that an individual's actions are causes with subsequent effects. One way to refine this definition is to distinguish between voluntary and involuntary control. Voluntary control means that you decide you want to produce a certain effect and take steps to cause it. For example, you want the house to be cleaner so you throw away stray papers. Involuntary control refers to unintended consequences of your actions. For example, one of those stray papers you threw away was the outline of the presentation you are to give tomorrow. The result is you have to write a new one. In a dream, an example of an involuntary effect would be causing a dream monster to pursue you by running away.

There are different ways to approach controlling dreams. A method that does not require lucidity is predetermination: selecting the setting or topic of the dream prior to sleep. This is akin to the idea of "dream incubation" in which a person works to induce a dream about an important topic in order to answer a question or resolve a conflict. In her book, *Creative Dreaming*, Patricia Garfield presents some evidence that motivated people can choose to dream about desired topics. Post-hypnotic suggestions have also been employed in attempts to elicit particular dream topics, again with some success, as described by Charles Tart in his essay in *Conscious Mind, Sleeping Brain*, edited by Gackenbach and LaBerge (1988). Success with creating a particular dream setting, however, does not imply the ability to control the sequence of events in the dream.

Concurrent control is ability to determine or alter the course of a dream in "real time," as it happens. This type of control is not limited to lucid dreams, anymore than our effect on the waking world is limited to times when we are thinking about what we are doing. Anytime we make a choice or act in a dream, we are controlling it. We may be unconscious of the reason for our choice, but the decision nonetheless originates within the self. However, people possessing lucid consciousness in their dreams are able to make deliberate choices and actions with full knowledge that they are experiencing a dream, and observe their effects on the course of the dream.

The question addressed here is how well can we influence dreams in the directions we desire? Do actions produce the aimed-for effects? Do we have more or less control over our experiences in dreaming than in waking?

THE RANGE OF OPINIONS REGARDING DREAM CONTROL

In the modern world, a wide variety of theories and opinions about the possibility or impossibility of dream control coexist. At one extreme, stand (or, perhaps, stood, as this viewpoint may have faded in the face of irrefutable evidence) some sleep researchers whose reluctance to believe in the possibility of deliberate dream control came hand in hand with their disbelief in the verity of lucid dreaming. Their opinions rose out of a faulty philosophy defining sleep as "unconsciousness,"

meaning lack of cognition. A better operational definition of sleep would be, "lack of perceptual awareness of the sleeper's environment." Without consciousness, clearly one could not consciously will anything. So, until an awareness arose among those studying dreams that dreaming was a state of consciousness, not unconsciousness, progress was not possible in this area.

Another kind of disbelief has arisen from dreamworkers, who employ dreams to help people achieve better psychological balance. Much of dream-based therapy (although not all) has operated on the premise that dreams are things that happen to people, rather than events that people create. The creator of dreams has been named the "unconscious." Because of this and the prevailing notion in the scientific world that sleep is unconsciousness, it has become common for people to believe that dreams occur in the unconscious mind, independent of the conscious "ego."

This cannot be true, however, because if it were, we would not be able to recall the experiences we have in dreams. Events that do not reach consciousness are not accessible to memory. The "I" of the dreamer, the one who sees, hears, feels, and reflects on the events happening in a dream is the self-awareness, the "ego," and it is conscious, although it may not be aware that its present circumstance is an entirely mentally-constructed world not guided by sensory information from physical reality.

As an illustration of the point of view that dreams are both from and in the unconscious, here is an excerpt from *Working with Dreams* by Ullman and Zimmerman:

Q. Can we program or control our dreams?

A. No, not consciously. If we look upon a dream as a kind of natural resource flowing within us, if we liken it to a river, a river shaped by our life experience, then its flow will not be changed simply by having someone on the shore urge a new direction on it. But if the person on the shore does the work necessary to make a change in direction possible, the flow will alter as desired. The point of the analogy is that there has to be more than conscious intent to influence the flow. There has to be a genuine emotional investment.

In the view expressed, dreams are predetermined "plays" somehow programmed out of the individual's current psychological processes. They are nothing like waking life. These same authors make an interesting comment about lucid dreaming. They state: "Although the dreamer can influence the subsequent course of dream once it becomes a lucid dream, the element of control occurs only within certain limits. An analogy might be Living Theater where, after the actors have created a certain framework, the audience is invited to influence the subsequent course of the play."

This statement implies that dream control is limited to actions appropriate to the original setting of the dream, which has its own defined boundaries and rules. This seems to imply that whatever part of the mind determines the original dream setting has primacy over other parts of the mind. Certainly, one of the great mysteries of dreams is what determines the original setting and situation one finds oneself in a dream. Despite reports that some people are able to decide what they will dream about on occasion, for the most part, dream topics seem to arise out of some source that is definitely not in consciousness. However, there is no evidence in support of Ullman and Zimmerman's contention that dream control is limited by the framework of the original dream setting, and many would refute it based on their own experience.

The Tibetan Buddhists, creators of the Dream Yoga, teach that it is possible to control every aspect of dream imagery. They use dream control as a method of comprehending the illusory nature of all experience, with the ultimate goal of transcending the relative and embracing the Absolute. In the "Doctrine of the Dream State" from *Tibetan Yoga and Secret Doctrines* translated by Evans-Wentz, we find the following instructions:

At the outset, in the process of realizing [the dream] to be maya, abandon all feeling of fear;
And, if the dream be of fire, transform the fire into water,

the antidote of fire.
And if the dream be of minute objects, transform them
into large objects;
Or if the dream be of large objects, transform them
into small objects:
Thereby one comprehendeth the nature of dimensions.
And if the dream be of a single thing, transform it
into many things; Or if the dream be of many things, transform them
into a single thing...

Then, the editors comment:

By such practices, the yogin is taught to realize that matter, or form in its dimensional aspects, large or small, and in its numerical aspects, of plurality and unity, is entirely subject to one's will when the mental powers have been sufficiently developed by the yoga. In other words, the yogin learns by actual experience, resulting from psychic experimentation, that the character of any dream can be changed by transforming or willing that it shall be. A step further and he learns that form, in the dream-state, and all the multitudinous content of dreams, are mere playthings of the mind, and therefore, as unstable as mirage. A further step leads him to the knowledge that the essential nature of form and of all things perceived by the senses in the waking state are equally as unreal as their reflexes in the dream state..."

The Tibetan Buddhists, however, were and are not given to sharing their personal dream experiences, so we cannot examine the nature of their dreams and their efforts to control them. Some notable Western expert lucid dreamers have given us a look into what they have been able to accomplish. The Marquis d'Hervey de Saint-Denys was an extraordinarily accomplished lucid dreamer and wrote instructively about his experiences. He exhorted his readers to strive to control their dreams in his 1867 book *Dreams and How to Guide Them*:

Those who would see in the incidents of our dreams merely a succession of mechanically produced impressions over which one has no more control than a simple spectator has over some pictures will naturally declare any effort and any exercise of attention or will to be incompatible with the very nature of dreaming. Since the most valuable observations I have been able to make seem to me to be due to my ability to maintain the faculties of attention and will during sleep, I shall naturally place great emphasis on convincing the reader that he can and should exercise the same control over himself. Here I come to what is perhaps the most interesting of my new propositions, and one that is open to experimentation on any reader's part. For it is through the combined action of attention and will during dreams that one can take the first steps in directing and modifying the course of dreams as one wishes.

Perhaps no one has experimented personally with dream control as much as Alan Worsley, the inveterate lucid dreamer who can claim to be the first to signal lucidity with eye movements in a sleep laboratory. First, a comment from Worsley regarding voluntary and involuntary control in dreams: "Non-lucid dreams use many principles that can be used in lucid dreams. For instance, it is likely, in a non-lucid dream, that if one believes one looks into a book about a certain subject, one will find relevant pictures in it. In lucid dreaming, one can use this principle by deliberately selecting a book about a subject one wishes to study."

Worsley has tabulated his attempts to influence dreams. A complete table of his results appears in *Conscious Mind, Sleeping Brain*, edited by Gackenbach and LaBerge. He rates the difficulty of various tasks as Hard, Medium, and Difficult, based on the percentage of times he was able to succeed at them. For example, he finds all attempts to penetrate dream matter with his dream body to be easy. Making sounds by striking things or speaking is easy. Reading single words or short phrases is easy, but reading long sentences is hard. He was never able to suddenly turn on a light in a dark room, although he was able to do so easily in a light room. Flying close to the ground was easy, and got progressively more difficult the higher he would try to go.

EXPERIMENTAL STUDY OF DREAM CONTROL

The wide range of opinions on the topic of dream control, and the reports we received of people's attempts to control dreams, piqued our curiosity about why it is sometimes possible to achieve a desired outcome, and sometimes it is not. Because dreams are entirely illusory, it should be possible to experience anything imaginable. Thus, perhaps failures arise from not imagining strongly enough, or not believing a certain experience is possible. On the other hand, perhaps there are physiological limitations on the ability to control dream imagery.

Our theoretical approach to dreams is based on the idea that the perceptual experiences in dreams arise out of activity in the same brain areas that produce perceptual experience in waking. This is why people have difficulty distinguishing dreaming from waking experience, and have to employ special techniques to recognize when they are dreaming. Physiological constraints on dream perception might occur if a certain brain area is not in a state conducive to the desired experience. For example, it might be hard to make a dark dream light, because the visual cortex is not active enough. This is one of the topics of research we would very much like to see explored: the relationship between dream perception and brain activity.

The NightLight study was designed to assess how successful people would be at accomplishing certain well-defined tasks in lucid dreams.

1. LIGHT SWITCH TASKS -----

- A. Find a light switch (indoors).
- B. Turn it on, and see what happens, then turn it off, and see what happens.
- C. Turn the lights on and off by willing it to happen and observe the results. (These two tasks were counterbalanced so that some tried the "magic" first and some second.)

2. MIRROR TASKS -----

- A. Find a mirror.
- B. Observe your reflection in the mirror.
- C. Move your hand to your face, watching it in the mirror and observe how the reflection behaves.
- D. Pass through the mirror and see what is on the other side. (The instructions gave an example in which the dreamer passes through the mirror and ends up in a different scene.)

These tasks represented a variety of types of influence, ranging from things that are easy to accomplish in waking (turning on a light, looking in a mirror), to impossible in waking (passing through a mirror). In addition, some tasks we thought might be impeded by brain state were included (the changing of light level). The purpose of asking people to both will a light on and off and switch it was to see what effect belief might have on the outcome. It is easier to believe a light will turn on when a switch is flipped than that will alone will turn on a light.

The instructions asked the participants to try each task in waking prior to attempting the tasks in lucid dreams, so that they would have the procedure well-rehearsed. Then, they were to try each task at least once in a lucid dream. They did not need to complete all the tasks in one dream, but could use as many lucid dreams as they needed. So that they would not forget details, the participants were asked to awakening immediately after the experimental lucid dreams and make complete reports of their experiences.

RESULTS

Twenty-seven people submitted reports of their attempts to carry out the assigned tasks, fourteen women and thirteen men. Altogether they provided 65 lucid dream reports, an average of 1.4 per person. The maximum number of reports from one individual was four.

A judge reviewed the reports to determine which tasks were attempted in each dream, and scored the result. The scoring for the tasks of finding a light switch or a mirror was either as "success" or "failure." The results of the actions of turning a light switch on and off, willing a light on and off, looking at a reflection, touching hand to face, and passing through a mirror received scores of "expected" if the result achieved the goal, "no result" if the action produced no response, and "unexpected" if something unpredictable happened.

"Expected" for turning and willing a light on and off meant that the light went on and off as it would in waking. "No result" meant the light did not change. "Unexpected" meant something other than the chosen light turning on and off. Examples of unexpected light results were: "the bulb slowly filled with what appeared to be thick, black tar," and "When I threw the switch, the outside porch light came on instead of the room light...didn't really increase the overall illumination."

For the task of looking at a reflection, a score of "expected" was given when people reported that their reflections in the dream looked like their reflections in waking. "No result" indicated that the person saw no reflection. This happened once; the person instead saw gray, swirling mist. If the reflection looked unlike the waking image, the result was rated "unexpected."

The same criteria as for the reflection applied to moving the hand to the face while watching in the mirror. An example of "unexpected" for this task was, "As I raise my hand to my face I see the reflected image of my hand go up but from then on I notice an increasingly 'hallucinogenic' breakdown of the image--such things as my finger, detached from my hand, disappearing into my mouth and holes appearing in my face."

The result of trying to pass through a mirror was scored as "expected" if the dreamer was able to move through the mirror and found another setting on the other side. "No result" meant that the dreamer found the mirror hard and unyielding, as in waking. "Unexpected" applied to cases in which the dreamer got through the mirror, but was then somewhere unlike what was described in the task instructions, for instance, in the same room, or "in a world of cartoon-like images."

The table [below] shows the results of the participants' tries at the tasks. The left-hand columns list the number of people who attempted each action and the number who achieved each kind of result. The right hand columns display the total number of tries at each task, and the number leading to each result.

Looking at the number of "expected" results, that is, cases in which the action produced the desired result, it appears that "willing" a light to turn on or off and using a dream switch are about equally easy. There seemed to be more cases of "no result" with willing the light on, but the difference did not pass a statistical test. The data hint that it may be easier to get a dream light to turn off than on. However, this conclusion may be premature, given that in the majority of cases, before trying to turn off a light, the person had already succeeded in turning it on. There may be a condition in which if you can turn on a light in a dream, you can also turn it off.

Clearly, it was very easy to find things in dreams that are usually around in waking, like a light switch and a mirror. People also had no difficulty performing the normal action of looking in a mirror and seeing a reflection, although it was more likely than not somehow different than the usual waking reflection, and in 12 cases (28%) the image transformed as the dreamer watched. This happened for 41 percent of the participants.

It would be reasonable to predict that passing through a mirror to another scene would be the most difficult task, given that it is impossible in waking life. However, almost half of those who tried succeeded, and 86 percent of the people were able to get their dream

bodies through the dream mirror at least once, even if they did not end up in a new scene. An example of an "expected" mirror result was, "I then went through the mirror and tried to imagine that the mirror was like water so I could easily slide through it. When I was fully through the mirror, I came up to the surface of the water I was in and noticed I was in a bright, sunlit backyard swimming pool with a roof shelter over it."

DREAMS CAN BE DIRECTED, BUT STILL DO THEIR OWN THING

The lack of large differences in the ease of accomplishment of the various tasks is in itself quite interesting. Lucid dreamers are able to exert a large amount of control over their dream experiences. But, it is far from perfect. Most notable is the reluctance of the mirror reflections to show normal images, and their fascinating instability. Self-image is of course a very psychologically loaded thing, probably with very complex internal representations. This may account for the strange images. The instability points up the most prominent difference between waking and dreaming perception. Dreams change. We exploit this in lucid dream induction training by instructing people to examine written phrases repeatedly, watching for them to change. An interesting question is whether the perceptual instability results from the lack of anchoring sensory input from the physical senses or from a state of the brain peculiar to REM sleep.

In their studies, the Marquis d'Hervey de Saint-Denys and Alan Worsley observed something they called the "light switch" phenomenon. This was an inability to change the illumination of a room on demand. From this study, it seems that this phenomenon is sometimes present and sometimes not. Some people who were able to turn on lights reported no concurrent change in general illumination, but others reported that there was an increase in brightness about half and half. So, "the light switch phenomenon" is not dead, but merely seems to be sleeping some of the time. A prime target for research would be to discover what the brain is doing under both circumstances.

It was rather remarkably easy for people to pass through a mirror and find something else on the other side. One might think, along the lines of the quote earlier from Ullman and Zimmerman, that a complete scene change would be a difficult thing to accomplish. In fact, we have already seen in another study that it is more than possible. In the results from an experiment published in the April 1987 issue of Omni magazine, 51 people reported trying to arrive a particular pre-selected target by spinning in a dream. Eighteen of them (35%) succeeded in arriving at their target. Thus, not only is it possible to create a new scene, but also to create one that is specifically desired.

In the final analysis, the Tibetan Buddhist view that all dream images are transmutable may be exactly right. If so, we wonder if it may be possible also to learn to control the stability of these images, creating lasting dream scenes and objects, achieving a state of virtual reality far beyond the wildest dreams of the computer programmers.

TABLE 1. Results of attempts to control dream content

Task	Number of Participants				Number of Attempts			
	Trying	Expected	Unexpected	No Result	Total	Expected	Unexpected	No Result
Turn On Light Switch	24	12 (50%)	8 (33%)	5 (21%)	38	16 (42%)	12 (32%)	10 (26%)
Turn Off Light Switch	20	15 (75%)	4 (20%)	3 (15%)	25	18 (72%)	4 (16%)	3 (12%)
Will On Light Switch	18	10 (56%)	4 (22%)	9 (50%)	31	13 (42%)	5 (16%)	13 (42%)
Will Off Light Switch	15	12 (80%)	3 (20%)	2 (13%)	20	14 (70%)	3 (15%)	3 (15%)
Look At Reflection	22	11 (50%)	16 (73%)	1 (4.5%)	43	11 (32%)	22 (65%)	1 (2.9%)
Hand to Face in Mirror	18	12 (67%)	6 (33%)	0 (0%)	20	14 (67%)	7 (33%)	0 (0%)
Through Mirror	21	10 (48%)	8 (38%)	7 (33%)	27	10 (38%)	9 (35%)	7 (27%)