Keith Hearne's Work on Lucid Dreaming

KEITH HEARNE
Hull, Northumberside, England

Many hundreds of people in the U.S. and other countries have written to me asking about my research into lucid dreaming, so let me summarize it thus. My ini-tial knowledge of the phenomenon came from reading Celia Green's little book Lucid Dreams, and van Eeden's paper given to the Society for Psychical Research (1913). Having completed some research into the modification of evoked responses by visual imagery (Hearne, 1976; 1978b), my thoughts turned to the question of whether a suitable channel of communication could be established between a lucid dreamer and the outside world, so permitting the dream to be studied "from within" for the first time. A method using ocular signalling, which circumvented the general bodily atonia of REM sleep, was found to work beautifully with a subject on the morning of 12 April 1975 at 8:07 in the Department of Psychology at Hull University. That breakthrough enabled me to define the basic characteristics of lucid dreams in a three-year study for a Ph.D. (Hearne, 1977; 1978a; 1980a,b; 1981a,c; 1982c) after transferring to Liverpool University. That thesis was lodged in May 1978, and copies are obtainable from the Librarian.

Essentially, that early research found that:

1. The lucid dreams were indeed genuine dreams occurring in Stage REM sleep, and not some form of waking imagery (although I think some may be);
2. They had a duration of several minutes and usually happened towards the end of the sleep period—on average some 24 minutes [sic] after the start of a REM period;
3. A prelucid REM burst, averaging 22 seconds, invariably preceded lucidity—indicating, perhaps, prior cortical stimulation;
4. The quality of sleep on lucid dream nights was no different from control nights;
5. The emotional level in the dream might be predetermined;
6. The reported events corresponded closely with information signalled from within the dream (it had never been certain how far one could trust dream reports).

Further items of research conducted at that time included a simulating control study—in which subjects attempted (unsuccessfully) to produce similar eye signals by cheating; questionnaire data; personality and intellectual capacity in relation to lucid dreaming; lucidity-induction methods; and description of various devices.

By the way, I was greatly encouraged in my research by Allan Rechtschaffen of Chicago University, with whom I corresponded and sent my early results to in 1975.

The Need For A "Dream-Machine"

The early work was inefficient because I had no idea when a subject would have a lucid dream—in one study, only eight lucid dreams were monitored out of 45 nights of continuous polygraphic monitoring. This problem caused me to ponder on the possibility of artificially inducing lucidity in subjects. Some form of external stimulation seemed a likely technique for producing an internal perception within the dream which might trigger lucidity by acting as a cue. To make an automated unit, some form of dream detector would also be required. Much effort went into developing both aspects of the "dream-machine." All sorts of stimulation methods were tried, including sound stimuli, sprinkled water, pungent odours, etc. However, a method of electrical stimulation to the median nerve at the wrist was found to be effective.

Different methods of dream detection were investigated. The first technique was to monitor REMs but this electrode system proved to be unsatisfactory in opera-tion. Eventually, the method of using a nasal thermistor was chosen—providing an artifact-free method of monitoring the respiratory rate differences between SWS and REM sleep. That device was patented, but another patent covers many other ways of detecting dreaming sleep (including monitoring penile erection!) and forms of stimulation. In a sleep-lab study the technique was found to induce lucidity in half the twelve subjects, in just one night each (Hearne, 1982d). Another function of the "dream machine" is its ability to wake (using an audible tone) the user from REM sleep, so increasing the amount of dream recall. That option might be useful for "dream interpretation" groups. Nightmare sufferers (Hearne, 1980c) and sleep-paralysis sufferers (Hearne, 1982e) could also use it to good effect. In connection with a TV programme here recently, the device induced lucidity in about one third of the users. One person entered the lucid state three times on one night. Hopefully, the units will become available in the U.S. later this year. (By the way, the unit which a student at Newcastle used—see last Lucidity Letter [Steven Venus, 1982, Early Results with Hearne's Dream Machine, Lucidity Letter, 1(2), 7]—is not one that I have tested, and it lacks certain new elements.

Another discovery I made was that the respiratory rate could be altered voluntarily in the lucid state. That gave rise to a further invention (Hearne, 1982a)—a unit which enables the lucid dreamer to participate in a dream-telepathy experiment. On becoming aware of dreaming, the subject makes a sequence of rapid breaths (de-tected by a simple nasal thermistor) which triggers an automatic telephone-dialing

device. The other person in the experiment is thus contacted and can attempt to send or receive telepathic information—if such a thing is possible. The dreamer's ac-counts are compared with the "target" information. The dream state has long been considered to be conducive to telepathy, and lucid dreams are particularly useful for research in this area because the dreaming subjects knows full well that he or she is taking part in an experiment and can concentrate on the task. The apparatus has been tested and found to work satisfactorily.

Over the years I have heard and read many dream accounts. I began to notice that the inability to switch on an electric light in the dream (lucid or ordinary) scen-ery was mentioned quite a lot. I therefore gave the task to eight lucid dreamers (Hearne, 1981). All reported back in isolation so as not to bias the reports. Six subjects found that the light would not work properly, one person could not find a switch, and the lights did switch on for one person—however that was just after she had "covered her eyes" in the dream and so abolished the imagery. It would seem that perhaps there is a "ceiling limit" on visual imagery-brightness and that an attempt, using dream control, to exceed that limit has to be dealt with (by the central dream-directing process) by rationalized avoidance of the intended situation. A follow-up study (Hearne, 1982b) found similar results, but one subject reported switching on a light with no prior decrease in brightness level. Conceivably, on those odd occasions when it does work [see also Tart's report, last issue], the event might correspond with spontaneous phasic activity which might at that moment in-crease the ceiling limit. Clearly, further research is required here. I have a feeling that the "light-switch phenomenon" might also be observed in waking imagery, using good visualizers. They must, of course, be naïve subjects.

The second study also indicated that the various imaging modalities may be loosely linked in dreams and that "substitution" of imagery may occur in other mo-dalities. The forms may have different priority of effect over others at any one time. Schools of dream "interpretation" have failed to consider the possibility that there might be natural limitations in dreams; therefore many "analyses" could have been highly erroneous. On "closing" or "covering" their eyes in the lucid dream state, all six respondents reported that a scene shift occurred. In two cases, a rerun of the dream happened. Oneironauts (Hearne, 1981c) need to learn about these techniques in order to make the most of their lucid dreams.

In response to a questionnaire about lucid dreams printed in a British national newspaper in 1980, much information was acquired (Hearne, n.d.).

Lucid dreams are without doubt an important new avenue of research because, apart from insights into the dreaming process that we are sure to discover, I think we shall

be able to learn something about consciousness itself. The "switching on" of consciousness in the unchanging physiological state of REM sleep can be sudden. A study of the brain's activity at that moment could be most rewarding. In addition to such knowledge, the induction of lucidity by suggestion or electronic techniques could open up a limitless "inner universe" of experience to many people, and the undoubted creativity aspect of dreaming sleep could be harnessed so that man may research new heights of artistic and scientific invention.

References

Green, C. (1968). *Lucid dreams.* Oxford, England: Institute for Psychophysical Research.

Hearne, K.M.T. (1976). Visual imagery and evoked responses. M.Sc. thesis, Department of Psychology, Hull University

Hearne, K.M.T. (1977). Eye-movement communication from lucid dreams: A new technique and initial findings. Paper given to 11th Post-doctoral Conference in the Behavioural Sciences, Hull University, April 15-18.

Hearne, K.M.T. (1978a). Lucid dreams: An electrophysiological and psychological study. Ph.D. thesis, University of Liverpool.

Hearne, K.M.T. (1978b). Visual imagery and evoked responses. Psychological Research, 40: 89–92.

Hearne, K.M.T. (1980a). Insight into lucid dreams. Nursing Mirror, March 6: 20– 22.

Hearne, K.M.T. (1980b). Lucid dreams, a new area for psi investigation. Paper given at An-nual Conference of the Society for Psychical Research, Brighton, April 21–23.

Hearne, K.M.T. (1980c). Terror lurking in the dark. Nursing Mirror, August 14: 18–20.

Hearne, K.M.T. (1981a). Control your own dreams. New Scientist, 91(1272), 783–785.

Hearne, K.M.T. (1981b). A 'light-switch' phenomenon in lucid dreams. Journal of Mental Imagery.

Hearne, K.M.T. (1981c). Lucid dreams and 'ESP': An initial experiment using one subject. Journal of the Society for Psychical Research, 51(787), 7–11.

Hearne, K.M.T. (1982a). An automated technique for studying 'psi' in home lucid dreams. Journal of the Society for Psychical Research (June).

Hearne, K.M.T. (1982b). Effects of performing certain set tasks in the lucid dream state. Perceptual and Motor Skills, 54: 259–262.

Hearne, K.M.T. (1982c). Eye-movement communication from lucid dreams: A new tech-nique and initial findings. Perceptual and Motor Skills.

Hearne, K.M.T. (1982d). Lucid dream induction. Journal of Mental Imagery (Fall).

Hearne, K.M.T. (1982e). Trapped in sleep. Nursing Mirror, January 13: 34–35.

Hearne, K.M.T. (n.d.). Features of lucid dreams: Questionnaire data and content analyses. (unpublished.)
Tart, C.T. (1982). Switching on a light while lucid. Lucidity Letter, 1(2), 8.
van Eeden, F. (1913). A study of dreams. Proceedings of the Society for Psychical Research, 26(47), 431–461.