

FIRST OFFICIAL PUBLICATION OF KEITH HEARNE'S LUCID DREAM RESEARCH

**THE ELEVENTH POST-GRADUATE
POST-DOCTORAL CONFERENCE IN THE
BEHAVIOURAL SCIENCES**

**15th – 18th APRIL, 1977
HULL UNIVERSITY, ENGLAND**

P R O G R A M M E
FOR
THE ELEVENTH POSTGRADUATE-POSTDOCTORAL CONFERENCE
IN THE BEHAVIORAL SCIENCES
15th-18th APRIL, 1977
H U L L

Accommodation is at Loten Hall and meals are provided at the Newland Park Hotel on Cottingham Road, opposite the University.

All papers will be given in the Arts Block, LTA.

Sunday, 17th April, 1977

9.00 a.m. Breakfast.

Session 3 Chairman: Dr. R.I. Horrell

10.00 a.m. Dr. J.A.C. Empson, Department of Psychology,
University of Hull.

"Periodicity in Temperature and Mood in Man".

10.30 a.m. Keith Hearne, Department of Psychology,
University of Liverpool.

"Eye-movement Communication from Lucid Dreams -
A new technique and initial findings".

11.00 a.m. Lucienne Cronin, Department of Psychology,
University of Hull.

"Age Differences in Menstrual Symptomatology".

11.30 a.m. Coffee.

11.45 a.m. Dr. K.C. Phillips, Department of Psychology,
University of Hull.

"Operant Control of Heart Rate in the Rat".

12.15 Stephen P. Maddison, Department of Experimental Psychology,
University of Oxford.

"Cholecystokinin: An Intestinal Hormone with a central
Site of Action".

12.45 p.m. Colin J. Jatham, Department of Psychology, University of Leeds.

"Pharmacological manipulation of drinking behaviour in
several rodent species".

1.30 p.m. Lunch.

Acknowledgements

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Mr J. Devine
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The Committee

Miss Janet Baker

Stephen Lister

Andrew Tilley

Miss Sarah-Jane Clear

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Department of Psychology,
University of Hull.

Paper given at the 11th Postgraduate/Postdoctoral
Conference in the Behavioural Sciences, at Hull
University. April 17 - 19th, 1977.

(First academic revelation of signalling technique).

EYE-MOVEMENT COMMUNICATION FROM LUCID-DREAMS - A NEW

TECHNIQUE AND INITIAL FINDINGS.

BY

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Abstract:

Initial electrophysiological
findings are reported of a study on a S who is able to communicate
from lucid-dreams by eye-movements - thus circumventing the general
bodily paralysis of REM sleep.

INTRODUCTION:

Lucid-dreams are those in which the dreamer has the insight to realise that the experience is a dream. This state of critical awareness within the dream is often subjectively reported as continuing for several minutes. A further characteristic is that the dreamer may report an ability to exercise a large element of control over the content and course of action. Not everyone has this type of dream, but a few people experience them frequently - perhaps several times a week. Van Eeden (1913) first employed the term "lucid-dream" to describe the phenomenon, though other terms also occur in the literature e.g. dreams of knowledge, dreams of reason. The perceptual detail and setting in these dreams may be so realistic that the dreamer may have to test the situation by attempting an activity specific to dreaming, such as flying or floating in mid-air. Occasionally, the S may think he has woken up from a lucid-dream as the verisimilitude of the setting with the S's bedroom may be so convincing. This phenomenon constitutes a "false-awakening".

Let me illustrate a lucid-dream by describing my first lucid-dream, which I experienced a few months ago: I was wandering along by the sea, I think it was the Mediterranean. I looked down at the sand and noticed some metal - this interested me. Next, I was digging with my hands, and came across a hoard of coins - gold, silver and copper. Suddenly, I thought that this was in fact a wish fulfillment, which I had experienced before in dreams. I then realised that I was dreaming, as I couldn't possibly be there really. I said aloud to myself "This is a lucid-dream". I stood up and looked around me. It was an amazing experience - I was conscious yet in a dream environment. I noticed that details were very clear, and that colours were exaggerated. The sky was deep blue, the sand very bright yellow. I remembered the controllability aspect of lucid-dreams and tried to conjure up a person. There was a stack of deck-chairs about 20-30 feet away. I walked over to them hoping to discover someone behind them.

As I moved over to them I remember thinking what a lot of dream-time that action was taking. There was no-one there, and I felt disappointed. However, I looked around at more of the scenery, then noticed a girl coming towards me. She was short, dark with green eyes. She said hello, and told me her name was Jane. (As it happened I did meet someone exactly like her a few months later, in strange circumstances .) The dream continued for a minute or so, then I woke up. Throughout, I was conscious, yet in a solid, tangible dream world.

A few authors have published accounts of their lucid-dreams, collected over several years: Van Eeden(1913), Whiteman (1961), Fox(1962). Green(1968) collated data from these and other sources, so providing a more coherent picture of the phenomenon.

It appears that the cultivation of lucid-dreams has been a part of mental development in some allegedly "primitive" culture groups. Castaneda (1973) reported that in his quest to become a "warrior" or "man of knowledge" under the guidance of the Mexican Yaqui Indian and sorcerer, don Juan Matus, he was informed that these dreams should be utilized as one means of obtaining "power". The technique of "setting up dreams" was described to him. He was instructed to observe his own hands in a dream as a start to observing dreams carefully and so developing awareness within the dream.

Altogether, little research has been undertaken into lucid-dreams, in spite of their potential importance. The high level of critical awareness and the ability to manipulate events in the dream provides the basis for a new understanding of the dreaming process. It has not even been known in which sleep-stage these dreams occur, although Stage REM has been assumed.

In view of the lack of experimentation in this field, an initial sleep-lab study was begun of a S who experiences

frequent lucid dreams. The S usually wakes involuntarily at the end of a lucid dream. At the start of this research it was appreciated that this fact provided a means of identifying the immediately preceding sleep stage. It was also realised that if the S could somehow signal the onset of lucidity, and similarly mark the start and finish of specific activities in the dream, this would greatly increase the data for electro-physiological analysis. In addition, cognitive information concerning the ongoing dream could be conveyed to the external world. Tart (1965) had wondered whether a 2-way communication system between S and E could be developed so that the S could be instructed to perform tasks and report back whilst dreaming. Also, Green (1968) mentioned the possibility of training Ss to make motor responses from lucid dreams.

In considering this problem, it occurred to me that as only the eyes are readily motile in REM sleep whilst the rest of the body is paralysed, it might be possible for a sleeping S in a lucid dream state to perform deliberate eye-movements as a means of communicating to the E. It was found that this method did indeed work. The S was able to make extreme horizontal ocular movements during the ongoing lucid dream, without waking. 7 or 8 movements were found to produce a totally unambiguous EOG signal different from any natural REM sequence. The S was not able to signal by other means. He could not press a micro-switch (taped to the hand) simultaneously with the ocular movements, although he dreamed of doing so. Similarly, "running commentaries" of lucid dreams were not accompanied by submental EMG elevation..

Thus, with the onset of lucidity marked by unique EOG signals and the end by waking, this study analyses basic electro-physiological measures of lucid dreams.

METHOD:

The S was a male psychology graduate aged 37, who experiences lucid-dreams approximately once or twice a week. He has had these dreams for some 20 years, and is able to control the content to some extent.

The study was begun at Hull University where the polygraph equipment used was an Elema-Schonander Mingograf. The work was moved to Liverpool University where a Grass polygraph was employed. At both locations, 4 channels recorded bipolar EEG, EOG and submental EMG. EEG was derived from electrodes in approximately Pz and Fz positions according to the international 10-20 electrode system (Jasper 1958). EOG was recorded from electrodes placed above and below the outer canthus of each eye, measuring diagonally across the face.

The S was instructed to signal whenever he realised he was dreaming, by (a) making 7 or 8 left-right ocular movements, and (b) simultaneously pressing a micro-switch, which was taped to the hand and required only a slight pressure to operate. In addition, the S was requested to signal the onset and offset of specific dream activities, and to perform various dream tasks. However, this paper concentrates on the electro-physiological aspects only.

On waking the S was asked to give a report of any dreams he had experienced. He was not asked whether he had had a lucid-dream.

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