

A FEW people have a remarkable type of dream where they develop full awareness — while asleep and dreaming — that the experience is a dream. The fact is that if a dream has been applied.

It is like being awake, having free will and possessing one's normal critical faculties, but going, either totally artificial, or otherwise, into a dream world.

Objects and people appear to be — and feel — solid, and the lucid dreamer is able to hold conversations with the dream characters. The visual imagery is sometimes reported to be even more vivid than vision in waking life. In addition to the strangeness of the situation, the lucid dreamer has super-human powers.

Lucidity often arises as the result of waking, during, or just before, the dream, or seeing something which has previously triggered the state.

The lucid dream has been a little-known phenomenon (even among psychologists and sleep-researchers) but its scientific significance is fairly apparent. If the lucid dreamer is able to conduct experiments and observations in the dream and obtain information to the outside world, much empirical data could be collected about the dreaming state.

However, a major experiential problem with the signalling idea is the fact that the body is virtually paralysed in Stage REM sleep, associated with dreaming. An evolutionary trick to prevent us acting out dreams and so possibly causing injury.

Fortunately, a method to overcome this problem was devised. The eye musculature is not inhibited during Stage REM sleep. So, the lucid dreamer is wired-up in the sleep-laboratory, and instructed before going to



The dreamer in a detail from Henri Gervex's *Rolla*

Sometimes, you even dream that you are dreaming.

Behold, it IS a dream

KEITH HEARNE describes research in an inner universe

sleep (demonstrating that long-term memory is effective in sleep). He made several left-right eye-movements on becoming lucid.

In a study carried out at Liverpool University, physiological measures and dream reports were obtained from a subject who experiences frequent lucid dreams.

From signalled data it was assumed that all the lucid dreamer's reports were accurate and unambiguous. Stages REM sleep, which indicates that they were indeed dreams and not say, a form of imagery from drowsy sleep. Lucidity invariably followed a burst of rapid-eye-movements (averaging 22 seconds duration).

A reasonable explanation, perhaps, is that spontaneous neurophysiological activity in the lucid dreamer's eyes, which also stimulates the brain, is acting on a level where consciousness is attained in the dream state.

The duration of this subject's lucid dreams (measured from onset-signals to spontaneous waking) varied from 1 to 6 minutes, with an average of about 2½

minutes. They usually happened between 6.30 and 8.30 a.m., some 25 minutes before the beginning of a dream period (REM sleep) and have a cycle of about 90 minutes, alternating with 'slow-wave' sleep. There were no differences between the quality of sleep on lucid dream versus non-lucid dream nights.

There is some evidence to suggest that the emotional level in the lucid dream is precisely the same as in the neuro-physiological processes cause REM bursts, since heart-rate in the lucid dream correlated very highly with the duration of the pre-lucid REM burst. Peculiar discrepancies between emotions and events in ordinary dreams have long been noted.

The accounts of lucid dreams, obtained on waking, are in complete agreement with information communicated at different points, showing that the dream report is accurate within the ordinary limitations of short-term memory. Much other basic data concerning dreams was similarly made available for the first time.

A second mode of com-

munication was also discovered: the lucid dreamer is able, voluntarily, to control his breathing. Experiments in which the sleeping dreamer, and paralysed subject (linked to a respiration sensing device) has activated scientific equipment automatically on becoming lucid by making a sequence of rapid breaths. Such a technique is useful in a number of situations involving the perception of external stimuli in the dream state.

As an example of one of the discoveries which has emerged from the accounts supplied by several lucid dreamers (all of course acting in ignorance of one another's reports), is the strange fact that it is often not possible to switch on a light in a dream lucid or does not work for some reason, or the light flickers feebly.

The conformity of this observation leads to the notion that attempts to violate the imagery level at the time in dreams results in planned avoidance of the situation. Thus, the

picture emerges of an automatic dream-production process weaving a story as best possible within various limits such as imagery ability, and with a pre-determined emotional framework.

Some knowledge of the neuro-physiological activity associated with consciousness itself (psychology's awesome mystery) may be forthcoming. The appearance of consciousness in a lucid dream is sudden, with no change of state. The signalled waking is a detailed recollection of what happens in the brain at that moment. Important clues as to the nature of our very awareness. The value of dreams is not generally appreciated in Western society. However, they could constitute a vast untapped natural psychological resource. Conscious, controllable dreams would be an immense benefit to creators, composers, inventors, many original ideas have sprung from the dream state, ranging from tunes of Mozart to the model of the molecule.

In a lucid dream a composer could conjure up a performance of a future work. The same might be said of cultures, dream-control and dream-awarness have always been important aspects of life. In this society, the occurrence of lucid dreams may be encouraged by an interest in, and the noting-down of, dreams. Recently, a method of inducing lucidity by means of external stimulation during dreaming sleep has been proposed. The frequency of the stimuli in the dream acts as a psychological trigger to initiate the state.

It seems that space-age technology might also open up this inner universe, which is surely an equally exciting prospect. Dr Keith Hearne is a psychologist and a sleep researcher at Hull University.