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Communication between Individuals in Altered States

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In this follow up study, we wanted to focus specifically on the work of the pioneer sleep researcher Allan Rechtschaffen (1970). Rechtschaffen reported pilot studies using music stimuli in order to enable the sharing of the content of nocturnal and hypnotic dreams. Two individuals seemed to be outstandingly successful although the experiments were never fully replicated nor followed up. In our contemporary set-up we do not have the facilities for individuals to sleep overnight in the laboratory, but we do have the facilities for day-time sleep projects. Our initial work using hypnosis and the light simulator had not been encouraging so we now concentrated on REM and NREM dream states. It should be pointed out that dreams do occur regularly during none REM periods as well as REM (Hobson, 2011).

It was important to select individuals who could produce dreams during the day in the laboratory and preferably those who also had experience at lucid dreaming. There are a few individuals who also profess to have developed control over lucid dreaming and can regularly facilitate their occurrence: Ideally then a large scale survey might produce access to such individuals. Currently, because of popular films such as *Inception,* there is at large interest in lucid dreaming amongst students so we wished to capitalize on this in our recruitment. In addition, the practice of power naps has achieved a prevalence amongst the student population although it is largely unresearched.

In our surveys and recruitment, we defined a **shared or mutual dream** as a dream which appears to overlap in content and in approximate time with another dreamer's experience. Shared or mutual dreams, especially when they occur in the context of lucidity or heightened consciousness, would if taken seriously, enable such an exploration of this inner space to take place.

The concept of **power naps** was coined by James Maas. Sara Mednick and co- workers reported studies in *Nature Neuroscience* (2002, 2003) which concluded that short and long naps (30 and 60 min) are characterized by Slow Wave Seep and some REMs. These naps were found to facilitate learning and they to be appeared important for consolidation of memory. Although the periods for naps is short, REMS of some seconds duration did occur and it is also believed that dreams are regularly reported during power naps although there is apparently no formal investigation of this. The survey was thus aimed at documenting the frequency and duration of power naps, but also incorporated the **Lucidity Scale** to give information on this topic. The lucidity scale was formalized by us but based on the work of Robert Waggoner and E W Kellogg. It records here the frequency and content of lucid dreams in the student population.

Method

The study worked with participants mainly selected on a volunteer basis via this survey for their potential at experiencing lucidity. Fifteen pairs of participants took part in an experiment

(two returning making in all 17 sessions) designed in the form for telepathy experiments where one of the participants took on the role of sender and the other took the role of receiver. Both of the participants were encouraged to have power naps during the session which lasted 45 min. Both the receiver and receiver were fitted with Lucid Dreamer Masks with built-in sensors and with earphones receiving relaxing seashore sounds (waves). The sensor reacted to the occurrence e of REMs by emitting a short flash of red light directed at the eyes of the dreamer. The aim is to thereby facilitate a heightening of consciousness and critical thinking during the dream process and increasing the likelihood of lucid dreaming. Both participants relaxed in identical reclining chairs in rooms located at 30 meters distance from each other. No communication occurred until after the evaluation of the procedure.

In order to provide an objective evaluation of the occurrence of mutual dreaming, participants in the role of the sender viewed and listened to the target music clips prior to the sleep session. After this, the sender relaxed in the reclining chair with the aim of having a dream period. During the 45 minutes, the sender listened to sea-shore noise supplied to them through earphones and was fitted with the REM monitoring mask (the REM Dreamer). This was placed over the eyes with the purpose of reducing visual stimulation as well as facilitating lucidity during any REM periods.

The music clip targets were randomly selected 3 - 4 minute music videos with a positive and visually striking content (we used for instance the most successful music target – Dock of the Bay in Rechtschaffen's experiment). These were selected by a internet program www.random.org choosing first the set and then the individual clip. The target music clips with the accompanying film material were played only to the sender since the task of the receiver the task was to identify afterwards the target film clip from out the set of four music clips.

The target film clips were shown to the sender before relaxation and then played continuously at a semi-subliminal level (by adjusting the level to "just audible" and playing sea shore sound as a masking background) to the sender during the relaxation period.

Results

We gave the survey to 130 students (using 3 classes and giving two forms, the English version and the Swedish version). The survey found that about 80% of students reported experiencing a least one lucid dream with 24% of them reporting one or more per a month. The frequent lucid dreamers were more likely to report more content and communication with dream figures.

Shared or mutual dreams were reported by 13% of the respondents and occurred most often amongst those having one or more lucid dreams per month. A survey of students sleep habits indicated that so-called "power naps" are used purposively by 60% of students with 21% of students using them regularly (planned and at least once a week).

The results of the experimental study (power nap- dream study) were close to chance expectancy. There were 5 hits in 17 sessions (Exact binomial P = .43). Most reported having dream-like experiences but only one reported having a lucid dream during the experiment but the partner was unable to recall any noteworthy experiences. We did however note that the successes in this experiment and in the ones we reported previously, were associated with one of our experimenters (AKP) who took the role of sender when the participant came alone. Four of the five occasions produced hits this way. One of our most successful pairs participants were twins which is also of interest given our other area of current research concerns twins.

Conclusions and Further Work:

The results demonstrate the difficulties in bringing spontaneous experiences into the laboratory and in replicating promising pilot studies. We propose to continue with two further studies.

In May we will receive a visit from Robert Waggoner, former president of the Society for the Study of Dreams, and perhaps the foremost expert on experiences of mutual dreaming (Waggoner (2009). We propose to carry out a internet study but with a shared dream protocol building on the previous report by).

Further work with selected participants is needed and a longer sleep periods seems to be appropriate using late morning sessions which appear to optimize the occurrence of lucid dreaming (Levitan, 1991). The two previous experiments have given us a number of interested and selected participants with whom to work further with.

We are currently designing an experiment which will combine the design used above with the previously successful methodology used earlier in our work concerning the hypnoidal or ganzfeld state. This procedure will require both participants to be in the ganzfeld /hypnoidal state and apply the above method of one-way auditory feedback from the receiver room to the sender. This feedback aspect appears to have been a crucial aspect of Rechtschaffen's work on dreams and Tart's (1972) work on mutual hypnosis and it is important it be incorporated here.

The aim of the study to further evaluate if it is to possible this way to facilitate joint psi-derived imagery..

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