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Foretelling the Future: Only in dreams? A clinical study of induced lucidity and precognition.

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Using third-party software made available through a programming company called CSD Games, University of Portland State has conducted a clinical study of lucidity induction (as modelled by the Alert/Wake function, AW), and Reduced Time Index (RTI) among 16 sleeping subjects over a 28 day period. Through self-learning algorithms within the CSD software, the subjects' central nervous system was appropriately stimulated to enhance AW and RTI, respectively. This demonstrated an increased capability of experiencing the future regularly, as verified on low res video recordings of dreams. Under CSD induction, foretelling of events increased in a theoretically predictable way ($r = 0.957$). This suggests the existence of tachyonic signals being carried through cerebro-spinal membranes via synaptic voltage barriers.

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INTRODUCTION AND BACKGROUND DESCRIPTION

Can dreams predict the future? Can dreams create the future? What is the difference between these two phenomena, and what methods can we employ to discern this difference?

Ever since ancient times, humankind has been obsessed with the meaning of dreams. Is there a fixed meaning to a dream or is it subject to interpretation? What does a dream tell about the dreamer, if anything at all? And more importantly, what significance do we place on the dreamer actively participating in the dream, so-called lucid dreaming?

The concept of dream-based premonition is an integral part in all kinds of folklore, religions, and mythological theories, but it was only until 1899 that Sigmund Freud attempted a scientific treatment on the topic of interpretation of dreams in a publication that kickstarted psychology as we know it today, *Die Traumdeutung* (Freud, 1899).

Even though Freud's work hardly adheres to current scientific criteria, it does have historical value and no one can argue the cultural impact this and subsequent works has had on the perception of what it means to be human in general, as well as on psychology in particular.

One striking example of this is the widely famed theory of archetypes, as introduced in the seminal paper *Instinct and the Unconscious* (Jung, 1919). It is noteworthy that Jung, in his description of the archetypes, uses interpretation of dreams as a primary input into his theory. As is well-known, the psychoanalytic and archetypical approach to dream interpretation has many followers to this day. Both approaches share the viewpoint that the dreamer is subjected to a dream that inherently carries meaning, a meaning that the dreamer can chose to incorporate into his or her life or not.

The subject of using dreams as a tool for precognition on the other hand, has never taken any part of serious scientific research until now. Therefore, even though precognition is a common subject of popular science fiction, it lacks well-known historical figures to lend it empirical weight in clinical studies.

J.W. Dunne attempted to describe dream-based precognition in *An Experiment in Time* (Dunne, 1927). In this seminal work, Dunne describes dreams with precognitive qualities in great detail, i.e. dreams that foresee events that happened at a later stage in his own life, often in the space of a few days after said dream had occurred.

In an attempt at explaining this phenomena, Dunne introduced the theory of *Serialism*, in which time, as a subjective phenomena, is perceived by a dreaming consciousness that lives in a dimension higher than time itself. This consciousness then perceives all of history all at once rather than as a stream of milliseconds perceived one moment after another, as one does in a waking state.

Until our ground breaking article on the connection between *lucidity* and *time-awareness* (Dubois, 2017), Serialism has only had repercussion in popular culture. Anyone who has read *Slaughterhouse-Five* (Vonnegut, 1969) has come in contact with its main mechanism.

Dunne's argument is that consciousness, when dreaming, chooses the time that it wishes to perceive. If choosing a time that is in the dreamer's future, the effect is perceived before the cause. For example, dreaming of a car accident before it has happened, one can perceive the effects of the accident through the dream before the cause of it has taken place (this happens also in a subsequent waking state, e.g. by waking up in horror after having had a nightmare). Seemingly, this breaks the law of causality as described by the *Second Law of Thermodynamics* (Carnot, 1803).

This theory on the perception of time, as well as the non-adherence to the law of causality, has been widely studied by the natural sciences. One of the most noteworthy attempts was made in 1915 in the General Theory of Relativity (Einstein, 1915), by introducing time as a fourth spatial dimension. According to this theory, a breakage of the law of causality (a.k.a. *time-traveling*) only occurs if the time-traveller can travel faster than the speed of light. Such hypothetical time-traveling particles are called

Tachyons, but were first described as "meta-particles" (Bilaniuk et al, 1962).

The connection between perception of time in dreams and tachyons was first made in 2010, in the Bossman study (Bossman, 2010). In this study, transfer of marked signal substances across cerebro-spinal cell membranes seemed to indicate a link between perception of time in dreams with the electrodynamic potential-switching across cell walls. With a rudimentary electro-triggering mechanism of synaptic dopamine, Bossman managed to not only increase the probability of a subject's perception of the future, but also managed to mirror the decreasing strength of memories backward in time into a decreasing strength of memories *forward* in time, with subjects having stronger memories of events supposed to happen the next day, than events taking place in a weeks time (from the day of measurement).

Even though peer-reviewed studies of faster-than-light travel is still to be observed by the scientific community, the Harvard Theoretical Physics group under Savidge, Cruickshanks and Spence, claimed to have made progress in this field (Superlumina, 2017), but failed to make substantiated claims before their untimely disappearance.

THE PRESENT STUDY

The ability to view and guide dreams is an active area of research (Mario, 2017). The present study builds upon our recent findings that given a sufficiently high Stability-of-Sleep (SoS-index), dreamers are susceptible to dream guiding given a strong correlation ($r > 0.91 \pm 0.03$) between lucidity (LRE) and time-awareness (RTI) (Dubois, 2017).

In this article, we will address the specific issue of how these two factors can be used for dream-based precognition. We are investigating a sample of 16 individuals, by using a third-party software purchased through CSD Games company (CSD, 2018). We will use the dreamer's ability to postcognify as an extrapolating set when measuring the dreamer's precognitive capabilities. Furthermore and henceforth, the dreamer will be referred to as "the subject". The studies' aim is to understand the general rules and functions within the human mind/body system that governs the ability to precognify real life events.

METHOD

PARTICIPANTS

The limited sample size of 16 individuals is justified by limitations in cost (mainly the purchase of 16 pre-release CSD licenses), and the delicacy in the non-intrusive medical procedure associated with measuring blood and plasma levels over the course of several hours during each 24h time period.

The 16 subjects consisted of 8 male and 8 female participants of various nationalities (3 Chinese, 3 American, 2 Canadian, 2 British, 2 French, 2 Spanish, 1 Portuguese and 1 Swedish). They were selected out of a pool of 186 applicants, through interviews and psychological profiling.

Male average height and weight was 172.3 cm and 89 kg, while the corresponding female data were 166.5 cm and 71 kg, respectively. All test subjects had at least a high-school diploma, 9 of whom had at least a bachelor's degree (2 of whom had a post-graduate degree).

LOCATION AND DAILY ROUTINE

The study ran over a course of 4 weeks total, after a 2 day acclimatisation period. The entire study took place in a natural hillside resort in south Germany, under complete physical isolation from the outside world. However, it was deemed important for the results of the study that the test subjects were allowed contact with those who mattered most to them, since these are assumed to effectively trigger active dream-patterns. Hence, a one hour window of voice and/or video calls was allowed per day (between 10:30 and 11:30 each day), as well as a 3 hour window of supervised internet connection per day (between 14:30 and 17:30 each day). The "lights-out" schedule started at 22:00 and finished at 07:00 each day, with average sleep time 7h19m among the male subjects, and 7h34m among the females, respectively. At 21:30 (30m before lights-out), a ENT-certified practitioner would conduct the 3D-EM guiding of the conductive matrix that was to be used for data collection during the following sleep-cycle, as described below.

MEASUREMENTS

In this study, data collection was conducted in two different ways. Firstly, low resolution micro-mp4 video and H247 sound (VBR mp3), was collected using a carbon-Au nanotube matrix embedded in a Liquid Insulating Gel inserted through the tympanic membrane of the test subject. Through 3D-EM guiding, the matrix was then connected to the auditory nerve throughout the entire sleeping period.

The second method of data collection consisted of a set of electrochemical measurements lasting throughout a test subject's entire dreaming cycle. It was performed using wristbands with an inner layer of a topically absorbing electroweak sensitive α-He film, with an angular dependency on the α-He particle density, ensuring various penetration depths. This was a crucial step in the measurement configuration as different measurements required different electrochemical potentials.

Both methods of data collection would then be used by the CSD software to meet our scientific needs. The software performed above our expectations: the average time-delay from onset of the first dreaming cycle to the start of processing was 0.24 μs, adjusted for connective transmission lag.

The study was divided into two two-week periods. The first two weeks, henceforth called *Phase 1*, acted as a control phase during which the CSD software was non-interactingly collecting data during the subject's dreams-cycle. In addition, running time-averages of three main data-groups (sample frequency 60 Hz) was collected, relating to (1) *circadian rhythm:* melatonin ($\mu gmol^{-1}$), index body temperature (K), heart rate (bpm), blood-borne oxidative stress (OH equiv mol^{-1}), pineal gland response (ms); (2) *neurotransmitters:* serotonin ($\mu gmol^{-1}$), norepinephrine ($\mu gmol^{-1}$), synapse-voltage Ca^{++} channel (μV), dopamine ($\mu gmol^{-1}$); and (3) *steroid hormone:* plasma cortisol level ($\mu gmol^{-1}$).

The measurements of these three groups were then used to calculate three quantities crucial for our study: (1) Stability of Sleep (SoS-index), (2) Alert/Wake function (linear response extrapolation, LRE) and (3) Cell Agility (reduced time index, RTI).

During the second two weeks, *Phase 2,* the same measurement configuration as described above was used albeit with reversed polarity, corresponding to a net data transfer into the human hormonal system, and the human central nervous system, respectively. The time-averaged collected data during Phase 1 thus served to appropriately stimulate the test subjects, in order to guide their dreaming pattern as monitored by the SoS-index, the LRE and the RTI, respectively.

RESULTS

Out of the 16 participants, 14 showed a sufficiently consistent SoS-index of 1.0 ± 0.06, enabling further studies and analysis. Out of the remaining two participants; one had a SoS-index score of 0.86 (and was thereby excluded from further studies), and one had an SoS-index of 86.4 (an anomalous outlier, referred to as *Individual-16*). This outlier is noteworthy given that an individual is considered to be in temporary coma at an SoS-index of 53.2, permanent (irreversible) coma at 76.2, and brain-dead at an SoS-index of 92.0 or above. Individual-16 also showed anomalous sleeping behaviour, such as having several dreams (both pre- and post cognitive) at once, and having a divergent Alert/Wake function profile (leading to a divergent lucidity). This caused the CSD software to reset at various times during Phase 2 due to a safety cut-off within the software limiting the amplitude of inverted signals. Unfortunately, this individual escaped the resort one day before we had planned to voluntarily quarantine her for further studies.

Since dreams occur during REM sleep (Kleitman, 1953), our measurements were focused during observed REM sleep among all test subjects. Measurements were recorded during a two hour period each night, given that on average, an adult human will have roughly two hours of REM sleep per 8 hours of sleep (Siegel, 2005).

During Phase 2 however, REM sleep was significantly prolonged, from an average of 2 hours 12 min (Phase 1) to a staggering 4 hours and 3 mins. In order to have a

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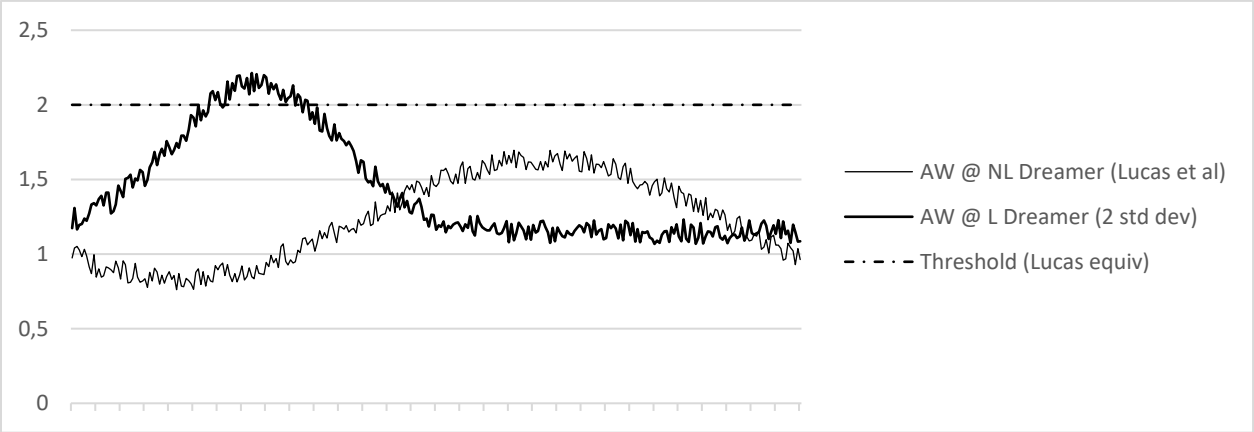

Fig 1. Alert/Wake Function as a function of time (Phase 1), showing the increased AW for our test subjects when compared to the average population (Lucas, 2012). AW larger than the threshold indicates > 90% probability of lucid dreaming ("L Dreaming").

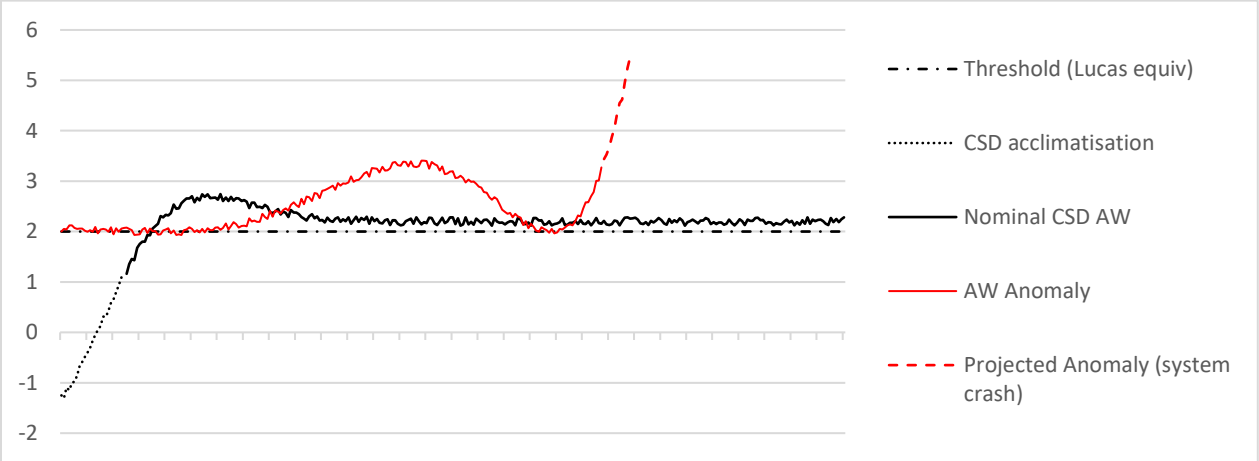

Fig 2. Alert/Wake Function as a function of time (Phase 2), showing how induction by the CSD software maintained test-subjects AW scores above the threshold value during a prolonged period of time. Shown in red [colour version online] is Individual-16. Contrary to the other test subjects, I-16 did not need an acclimatisation phase. I-16's divergent AW function would in theory correspond to tachyonic synaptic signal transfer. It caused several system crashes due to divergent infinities in the program code.

consistent comparison between Phase 1 and Phase 2, the corresponding 2 hour time frame within Phase 2 was chosen to be the one with the highest SoS-index during the course of mid-most 7 hour sleeping period of each test subject.

In the following, presented are various results taken as averages of the 14 participants over the course of Phase 1 (14 nights, or 196 total nights slept), and Phase 2 (also 14 nights). Thus, the curves in the figures represent a running average of 196 data points. In some cases, the anomalous effects of Individual-16 is also included.

Fig. 1 shows a Phase 1 benchmark comparing our test subjects to the results of the Lucas-study, which investigated the interplay between levels of neurotransmitters and synaptic-health, to lucid dreaming (Lucas et al, 2012). Based on the results of this benchmark, it can be concluded that our test subjects indeed were highly suitable to partake in Phase 2, given their higher than average scores during Phase 1. Fig. 2 shows our subject's response to the CSD software, when fed data extrapolated from Phase 1. This data was in the form of electrodynamic potential-switching, which when fed into the auditory nerve mimicked signals that had been received during the same SoS-index REM sleep during Phase 1. We can see that the initial "hump" in the AW function is present in both Phases, but in normal non-CSD sleep, any subject, even so-called lucid dreamers, will inherently revert back to non-lucid dreaming (as can be seen in Fig. 1: the majority of AW scores is below the Lucas threshold). In Phase 2, however, the AW function was maintained above the threshold for a prolonged period of time. This change of the AW function carries some significance since

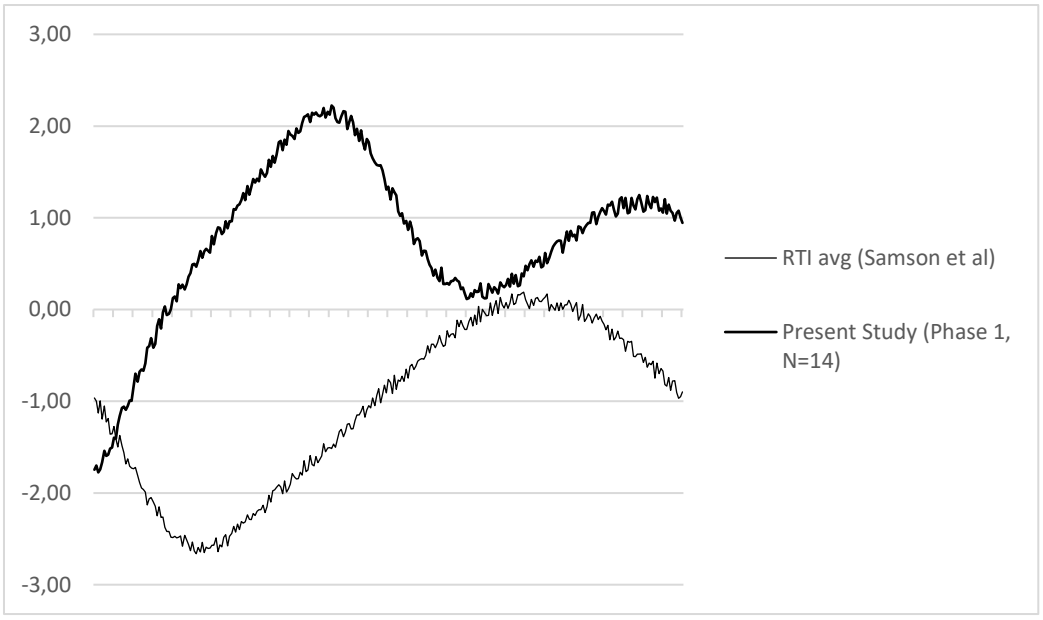

Fig 3. Reduced time index among the normal population (Samson et al) and among our 14 test subjects. RTI > 0 indicates perception of times lying in the future, hypothesised to indicate presence of tachyonic flow across cell-membranes and within cerebro-spinal fluids. As can be seen, our vetting process ensured that the test-subjects were indeed conditioned for futuristic perception, while the normal population only had narrow window of possible pre-cognition.

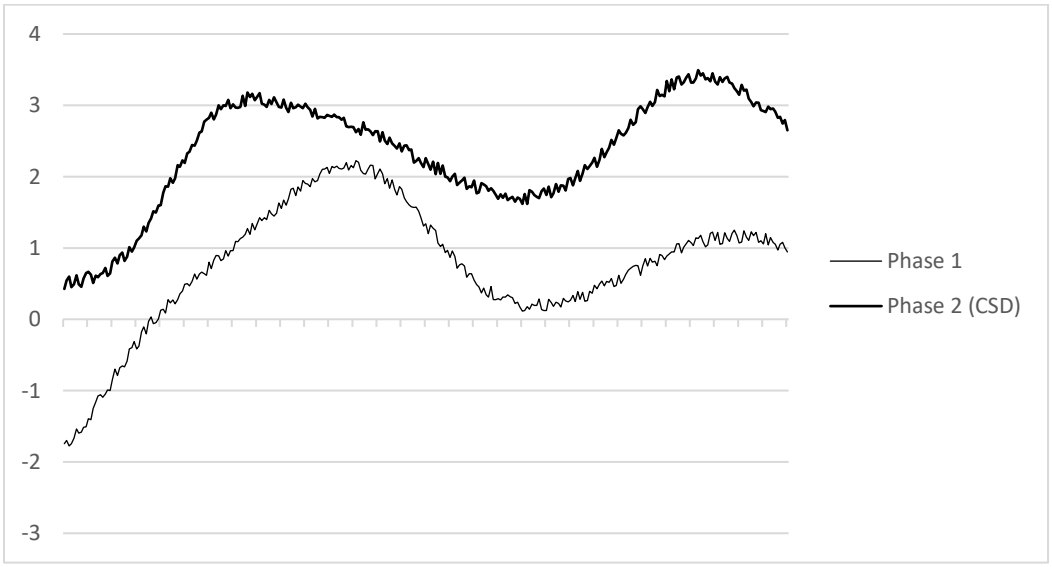

Fig 4. RTI measurements comparing Phase 1 (non-CSD induction) to Phase 2 (CSD induction). Here, the Phase 1 curve has been reproduced from Fig 3 above. It is clearly seen how CSD induction increases strength of perception of futuristic times, giving a consistently higher value of RTI for all times during the 2 hour measurement window, even though the general shapes of the curves seem to resemble each other (indicating the brain's propensity to adhere to established sleeping cycles).

the ability to precognify during dreams, according to our working hypothesis, scales linearly with the time-integral of the AW function, and thus increases if the value of the function increases (Dubois, 2017).

The second set of measurements can be seen in Figs. 3 and 4. In these, the reduced time index is shown during the same periods of sleep as mentioned above. Once again, we have chosen to compare our initial Phase 1 measurements to the average population, as previously demonstrated in Samson's seminal paper on Cell Agility (Samson et al, 2013). Samson's study consisted of continued sampling of 98 065 subjects, residents in the state of Michigan, over a 5 year period, and is currently held as norm when it comes to the relationship between perceived flow and direction of time in dreams, and brain cell-voltage barriers across the cerebro-spinal fluid membranes. The CSD

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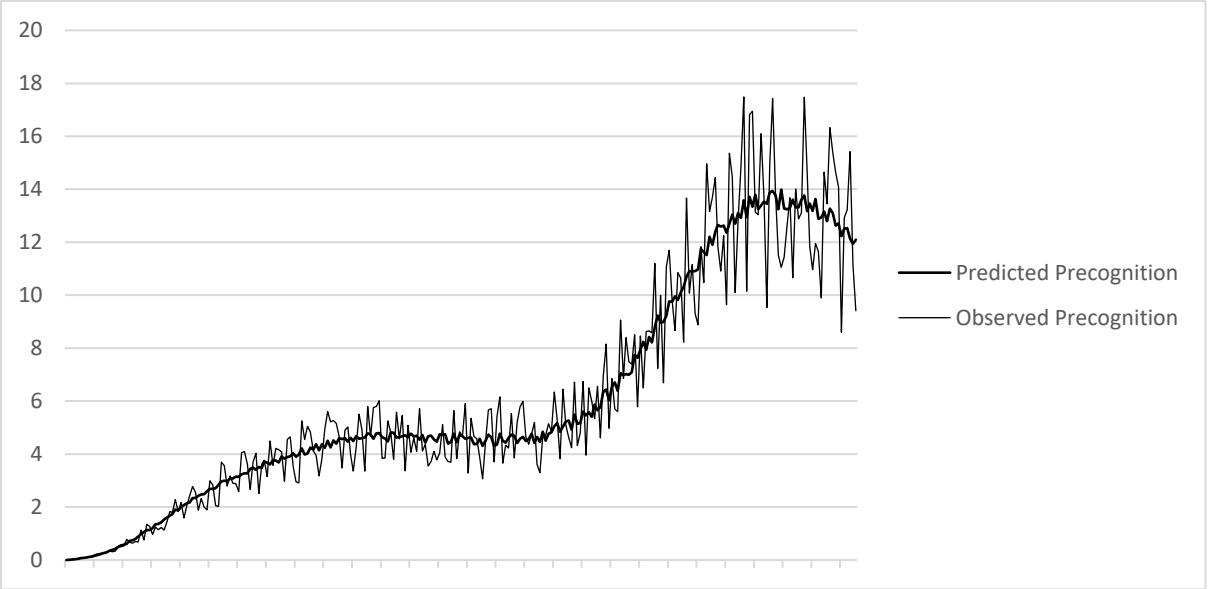

Fig 5. The observed number of precognifying dreams closely follows the predicted curve, with the exception of the anomaly registered by Individual-16. This can be seen in the total number of dreams being larger than the number of participants (=15), illustrating how I-16 had several precognifying dreams simultaneously.

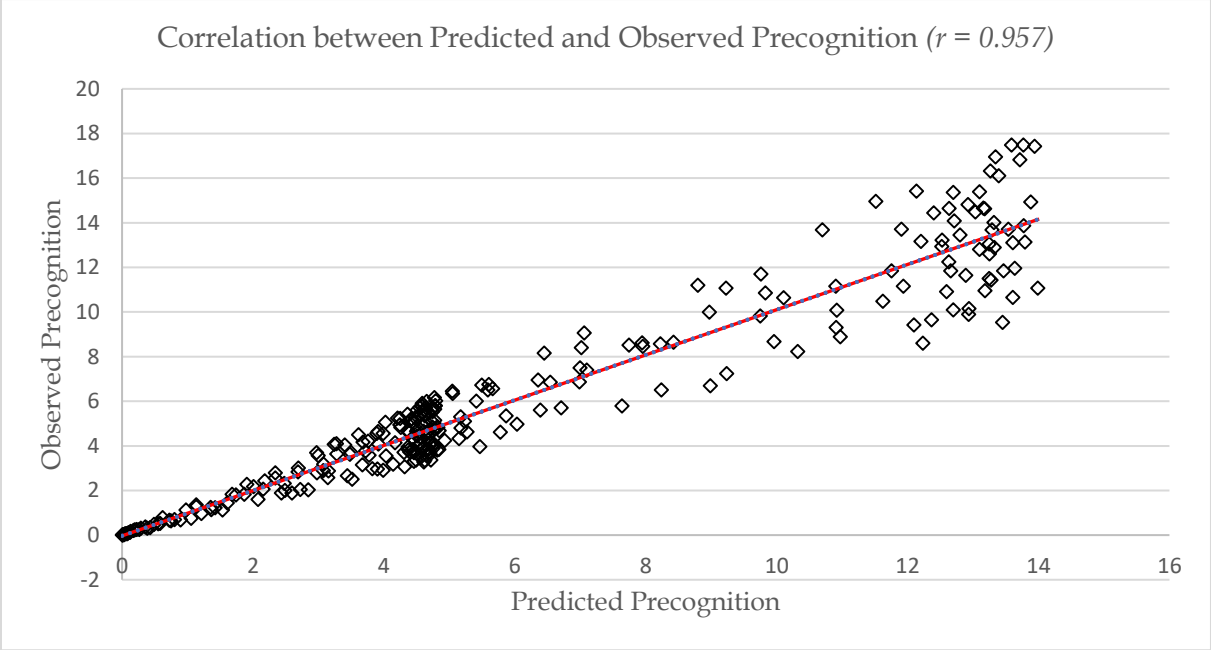

Fig 6. There is a strong correlation between our predictive model and the observed results. In fact, excluding Individual-16 from this dataset, the Pearson correlation coefficient increases to 0.981.

Phase 2 measurements further solidify the usage of this software, given that it's timely feedback of electrodynamic pulses, via the auditory nerve, is efficiently carried through into more efficient cell agilities and stimulated futuristic time perceptions.

Carrying over from previous work (Dubois, 2017), will use the Dubois-model for calculating the probability of precognition of a dreamer, based on the LRE and the RTI, respectively. This model predicts the average instantaneous probability $p(T)$ of having a precognifying dream at time T. The probability is calculated by the integral of the Alert/Wake function (AW) from time $t = 0$ to $t = T$, multiplied by the Reduced Time Index (RTI) perceived at $t = T$. By calculating the average of all test subject's probabilities, one arrives at an overall probability of having a precognifying dream out of a sample of N test subjects:

$$\frac{RTI(T)}{N} \cdot \int_0^T AW(t)\,dt$$

When normalising this probability to the known number of participants (in our case $N = 15$, i.e. including the anomalous Individual-16), one obtains the total number of precognifying dreams (which is always $\leq N$).

As Fig 5. shows, we found overwhelming accordance with this theoretical model, showing how observed precognifying dreams closely followed (albeit with some fluctuation) the predicted number of precognifying dreams.

Fig 6 is an alternative way of communicating this accordance, giving the overall Pearson correlation coefficient to be equal to 0.957. The exclusion of Individual-16 improves this correlation to 0.981, showing that even if extreme anomalies are included, the theoretical model still holds to sufficient degree of accuracy.

DISCUSSION AND CONCLUSION

In the present study, we have shown how the CSD software can be used to amplify a given individual's precognitive abilities. By using input data in terms of measurements of the circadian rhythm, neurotransmitters, and steroid hormones, we can show how the probability of having precognifying dreams increases. Furthermore, by recognizing the "footprints" of post-cognitive normal dreaming patterns, the self-learning procedural algorithms of the CSD software manages to extrapolate dreaming into the precognifying regime. This phenomena is clearly demonstrated by an increase in the instantaneous Alert/Wake Function, as well as in the significantly improved futuristic dream perception capabilities (as observed in the RTI measurements).

The classical *lucidity function L(T),* where $L(T) = \int_0^T AW(t)\,dt$ is multiplied by the Reduced Time Index, to calculate the total number of precognifying dreams within a given population. Even though our sample size was quite small *(N=15)* , we see a clear overlap of observed versus predicted number of precognifying dreams, further strengthening our theoretical framework, first introduced in 2017 (Dubois, 2017).

This should therefore provide enough evidence on how future technology can induce precognification, and we call on policy-makers to investigate what potential risks lie in breaking the second law of thermodynamics (i.e. the law of causality) among the general populace.

This work also seems to verify the existence of tachyons within electrodynamically switched voltage barriers in synaptic connections. When under the CSD software stimulus, several instances of the test subject "taking charge" and instructing the software to perform certain operations, before the conditions for said operations were perceived, occurred on numerous occasions. Under the present theoretical framework, this voltage reversal is only possible if a signal has travelled backwards in time in order to alert the software of a context that has not yet arisen.

This phenomena is backed up by our low res recordings of the actual dreams, since matrix back-loading would spike on average 9.65 ms after a precognifying dream had first occurred.

One last note should be mentioned on Individual-16. It was a female with initially normal sleeping and dreaming patterns (within the average values of the sample), but that soon showed anomalous behaviour once Phase 2 had begun. It is still not understood what mechanism was responsible for her diverging lucidity (as seen in Fig. 2, red curve), but it does seem to indicate a complete control of dreams during all stages of sleep, to the contrary of any other known case. In a waking state, her levels of AW would correspond to being in extreme fight-or-flight, with intense muscle spasms and above normal blood flow to sensory organs. Her RTI over the two-hour period during which measurements occurred averaged at 4.01, thus going beyond known possible limits, ultimately manifested in our observation of her having several precognifying dreams at the same time.

This would indicate a *perfect mirror*, i.e. being able to foretell the future by virtue of having lived in it (or at least seen it to full accuracy in dreams), with no time-related degradation loss.

Our research team postulates that the reason for her disappearance from the resort where the study took place, was due to her foretelling that we planned to voluntarily apprehend her the next day. If this is the case, it is the first known scientifically observed action to have taken place due to precognition, and is an achievement in its own right. Further research into extreme superluminal dreaming is therefore recommended, especially in conjunction with self-learning algorithms, either as external software connected to the central nervous system, or as internal micro- or nanocircuits implanted into the subject at a suitable location.

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