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Research Article

Extrasensory Perception as a Possible Mechanism for Volitional Self-awaking: A Pilot Study

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ABSTRACT

Circadian rhythms are biological cycles that control the timing of various processes within living organisms. Particularly, circadian rhythms and the light influence sleep/wake processes. We explored whether factors other than circadian rhythms or light influenced waking time in humans. On a chair located near the bed of the experimenter was placed an analogue alarm clock face up, separated by a screen. The experimenter inspired himself to wake up, if possible, at certain "exact" moments (target points) 00 min, 15 min, 30 min, and 45 min during any hour, with recording the time of waking up. In the first stage of the investigation (the Experiment 1), the alarm clock showed the correct time. The second stage of research (the Experiment 2) was distinguished by the fact that the assistant moved the hands of the alarm clock 7 minutes forward or backward, without informing the experimenter. In both stages, the time intervals between each recorded time point and the nearest 'exact' time point, were calculated and registered. Experimental data processing showed that time intervals are grouped around the mentioned target points (in the Experiment 1) and that the subject's waking time corresponded to the actual clock time even if the clock time was altered without the subject's knowledge (in the Experiment 2). This suggests that waking times were not regulated by circadian rhythms, but by some extrasensory means of assessing the actual clock time. So, the reason for a person waking at the exact time under the conditions of this experiment is not circadian rhythms or light, but an ability of a sleeping person to see the alarm clock via an extrasensory means.

Keywords: Circadian rhythms; Exact; Biological processes; Sleep and wake cycles.

INTRODUCTION

This study began with a few random observations. The experimenter began to notice that upon waking up in the morning, he would often see an "exact" time on the clock at his bedside. Note, he did not have to wake up at any particular time. These casual observations seemed suspiciously non-random, and he decided to search the literature for an explanation for this phenomenon, and if an explanation was not found, to test it empirically.

It was natural to assume that the observed effect is associated with circadian rhythms, that are involved in many biological processes.

Circadian rhythms are biological cycles that control the timings of various processes in the life of living organisms. These processes include sleep-wake cycles (Vitaterna MH, *et al.*, 2001; Zordan M, *et al.*, 2000; Beersma DG, Gordijn MC, 2007; Honma K, 2012). In these works, mechanisms that stimulate waking up at a certain time, include circadian rhythms and light.

AIM

The purpose of this paper was to investigate whether any mechanism(s), apart from circadian rhythms and light, may stimulate waking up at a certain time, when the moments of the occurrence of stimulating factors and the number of such moments are not predetermined in advance.

METHODS

An analogue alarm clock was placed, clock face-up, on a chair next to the bed of the experimenter. A cardboard screen was attached to the alarm clock such that the dial was not visible from the side of the bed. A pencil and paper were also placed on the chair for recording wake times.

The experimenter willed himself to wake up at "exact" times, if possible. Target waking points were: 00 min., 15 min., 30 min., or 45 min during any hour.

The strength of self-suggestion is important to decrease variability of results.

The experimenter recorded the time of waking after each instance.

To facilitate data processing and interpretation, wake-up times were converted into deviations (in minutes) from the nearest "exact" value. For example, if the time was originally recorded as 4:16am, this was converted to +1 min; similarly, a recorded time of 5:28am was converted to -2 minutes.

If (it is the 1st hypothesis) these times are grouped around the mentioned target points (averaged distribution curve is falling with a maximum at the target point), this would indicate that the moments of waking are determined by these target points, i.e. the self-suggestion of the experimenter determines, with some minor or inconsequential degree of error, the time of waking up. Otherwise (it is the 2nd hypothesis), if these times are evenly distributed (averaged distribution curve is flat), it will show that moments of waking are not related to target points, so we must conclude that the self-suggestion of the experimenter does not have effect on the moment of waking up.

Which of the two hypotheses should be accepted, or whether the averaged distribution curve is falling or flat, will be determined in two ways: 1) visually, 2) by comparing the average number of awakenings near and far from the target point.

This part of the paper will be called the Experiment 1.

The second part of the paper (the Experiment 2) aims to clarify the following problem. After completing the Experiment 1, it remains unclear whether waking at these target points is due to the fact that the experimenter might somehow see the face clock behind the screen or because his circadian rhythms are so accurate that he can repeatedly and with certainty wake up several times a night. In order to eliminate this uncertainty, in the Experiment 2 the assistant randomly moved the hands of the alarm clock by 7 minutes (half the distance between the target points) forward or backward every evening without informing the experimenter.

If waking up at target points is determined by the readings of the clock and not circadian rhythms, then the moments of waking will be near the target points according to the clock, and the average time interval between each recorded time point and the nearest target point will be approximately the same as in the Experiment 1.

If waking up at the target points is determined by circadian rhythms, then the times of waking should depend on the true time, not on the time shown by the clock, and the average time interval between each recorded time point and the nearest target point in the Experiment 2 will be approximately 7 minutes.

RESULTS

Experiment 1

Data obtained in Experiment 1, when the hidden alarm clock showed the correct time, are given in the Table 1 and Table 2 where d (minutes) equals time difference between the nearest target point and the given point (the actual waking time point) (Table 1 and 2).

The visual assessment of the figure 1 (logarithmic trendline) clearly shows that the averaged distribution curve is falling (Figure 1).

We can also compare the average number of awakenings near and far from the target point, using the data in Tab. 2. The average number of awakenings at four time points near the target point (for d=0-3 minutes):0.25(15+22+15+3)=13.75. The average number of awakenings at four time points far from the target point (for d=4-7 minutes): 0.25 (3+7+0+3)=3.25. Comparison: 13.75/3.25=4.23 shows that the averaged distribution curve is falling.

So, both assessment methods give the same result: the averaged distribution curve is falling, i.e. the self-suggestion of the experimenter determines the time of waking up.

Note: in the Experiment 1, when the hidden alarm clock showed the correct time, the time interval between each recorded time point (68 records total) and the nearest target point was 0.63 ± 2.6 min. This confirms that the recorded time points are located primarily around the target point, considering that the half of the distance between the target points is 7 min. (more precisely, 7.5 min). This result will be used, for comparison, in the Experiment 2.

Experiment 2

Data obtained in the Experiment 2 (37 records total), when the hidden alarm clock showed the wrong time, are given in the Table 3, where d (minutes) -time distance between the nearest target point and the actual waking time point (Table 3).

Table 1: Data obtained in the Experiment 1, 12.06.2018-28.06.2018 (clock time is correct)

Trial №	d, min	Trial №	d, min	Trial №	d, min	Trial №	d, min	Trial №	d, min	Trial №	d, min	Trial №	d, min
1	0	11	0	21	-5	31	4	41	2	51	-1	61	1
2	7	12	-3	22	0	32	5	42	-5	52	1	62	0
3	4	13	5	23	1	33	0	43	-5	53	2	63	2
4	-1	14	1	24	1	34	0	44	0	54	0	64	-2
5	5	15	-1	25	1	35	-1	45	1	55	-5	65	-1
6	1	16	3	26	0	36	1	46	4	56	1	66	-2
7	2	17	-2	27	-2	37	1	47	0	57	3	67	2
8	1	18	0	28	2	38	0	48	0	58	-1	68	-2
9	1	19	7	29	7	39	-2	49	2	59	-1		
10	2	20	0	30	0	40	-1	50	1	60	2		

Table 2: Number of awakenings between the nearest target point and the actual waking time point vs time distance, d, minutes

Time distance, d, minutes	0	1	2	3	4	5	6	7
Number of awakenings between the nearest target point and the actual waking time point	15	22	15	3	3	7	0	3

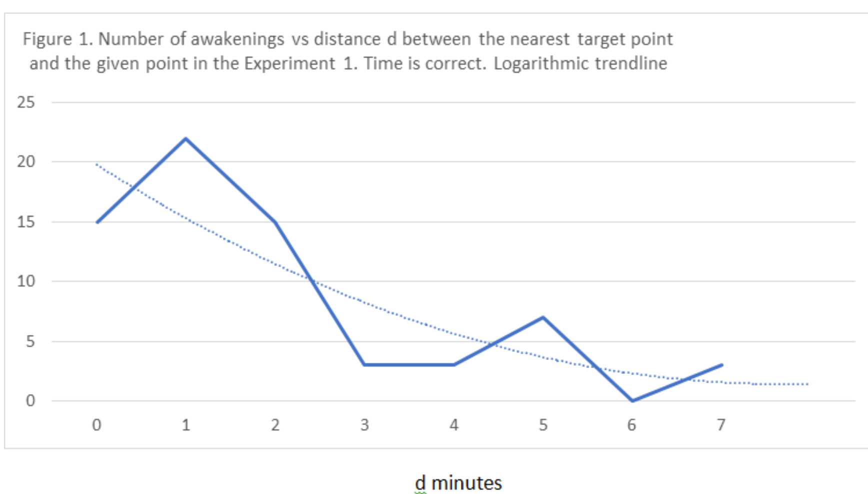

Figure 1 : Double ring infiltrometer and sensors

Table 3: Data obtained in the Experiment 2

Trial №	d, min	Trial №	d, min	Trial №	d, min	Trial №	d, min
1	0	11	1	21	2	31	5
2	1	12	-3	22	-1	32	3
3	-5	13	3	23	-1	33	-1
4	-2	14	3	24	2	34	0
5	0	15	-3	25	1	35	5
6	2	16	-3	26	-6	36	-5
7	-2	17	-2	27	-4	37	0
8	-2	18	2	28	1		
9	0	19	-4	29	-5		
10	-5	20	1	30	-5		

In this experiment, while the clock shows the wrong (shifted by 7 minutes) time, the time interval between each recorded time point and the nearest target point is 0.73 ± 3.0 min. This time interval is approximately the same as in the Experiment 1 (0.63 ± 2.6 min), when the clock shows correct time. Therefore, as described above, we must conclude that waking up at target points is determined by the readings of the clock and not circadian rhythms.

DISCUSSION

The results obtained at Experiments 1 and 2 indicate that the time of wakening is not determined by the circadian rhythms, but by the time displayed by the alarm clock. If the time of awakening would be determined by the circadian rhythms, the time distance between each recorded time after awakening and the time of the nearest target point would be around 7 minutes in the Experiment 2. We found that the average time distance between each recorded time point and the nearest target point was less than 1 minute (0.63 ± 2.6 min. and 0.73 ± 3.0 min). It is unclear how a sleeping person can track the time based on the clock's face. The fundamental cause of these results is unknown and warrants further research. For example, one can hypothesize an association between our results and the phenomenon of the extrasensory perception, probably, clairvoyance or its special case, remote viewing. (Targ R, Puthoff H, 1974; Tart CT, *et al.*, 1980; Brown C, 2005; Targ R, 2012; Krippner S, 1996).

Our study was conducted in the dark, while remote viewing studies were usually conducted in the light. A recent study by Krippner on Remote Viewing of Concealed Target Pictures Under Light and Dark Conditions gave the edge to dark condition performance; the difference was not statistically significant (Krippner S, *et al.*, 2019). This conclusion is in favor of the assumption that the observed phenomenon may be the kind of the remote viewing.

In our case, if we want to check a hypothesis about the remote viewing and similar by means of some mysterious agent, we may measure some real, objective physical properties of this agent: its optical transparency and color, ability to penetrate screens of various materials, range of action, and so on. If the presence of such properties of the agent is confirmed, this will provide us with the basis for further important research (Tsang AH, *et al.*, 2016, Tsang AH, *et al.*, 2014).

CONCLUSION

The cause of the phenomenon investigated is not circadian rhythms but the ability of a sleeping person to see an alarm clock, even though it is normally hidden. This phenomenon is a kind of extrasensory perception, probably, remote viewing. More research is needed to investigate the nature of it.

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