

Emulating alien and UFO encounters in REM sleep

Michael Raduga, Andrey Shashkov, & Zhanna Zhunusova

Phase Research Center, Moscow, Russian Federation

Summary. Alien and UFO encounters (AUEs) have been a well-known part of human culture for centuries, but we are still unsure of their nature. Some studies suggest that in some such encounters, these phenomena could be related to dissociative REM sleep states, like lucid dreams (LDs), sleep paralysis (SP), and out-of-body experiences (OBEs). The present research focuses on the hypothesis that if some of AUEs are indeed the products of REM sleep, then they could be deliberately emulated by LD practitioners. Therefore, this experiment could help to explain the mystery of AUEs. To check our hypothesis, we implemented an online resource through which we instructed a group of 152 volunteers to try to emulate AUEs via LDs. The volunteers made these attempts at home, and their reports were verified and analyzed by the researchers. Of the volunteers, 114 (75%) were able to experience AUEs after one or more attempts. The results indicate that 61% of participants encountered alien-like creatures, 28% encountered UFOs, and 24% experienced fear or SP. Regarding the successful cases, 20% were close to reality in terms of the absence of paradoxical dreamlike events. AUEs can be emulated willfully and can be perceived as being very close to reality. In theory, random people might spontaneously encounter AUEs during REM sleep and confuse the events with reality. This study helps to explain at least some AUEs that arise at bedtime. This study can be used to examine—and even emulate—other paranormal, religious, or mystical encounters, thus helping us to understand our culture and the human brain better.

Keywords: lucid dreams, out-of-body experiences, alien visitation, alien abductions, UFO, consciousness, REM sleep, phase state.

1. Introduction

There are around 1×10^{24} known stars in the universe (Marov, 2015), with 1.6 planets per star in our Milky Way galaxy alone (Cassan et al., 2012). Based on these numbers, Stephen Hawking suggested that it is impossible for extraterrestrial life not to exist (1998). However, we have not found any yet, which leads to so-called the Fermi paradox (Hart, 1975). People have believed in extraterrestrial civilizations for centuries (de Fontenelle, 1990). Mass media and books depict that aliens visit our planet on flying saucers or UFOs and have been doing so for a long time (Richardson, 2001). It is a popular belief that these aliens even sometimes contact people and abduct victims for different purposes (Appelle, 1995). Claims of such cases became widespread in the 1960s (Clark, 1997), but instances of these claims can be found as far back as the late 19th century (Colvin, 2004). Many famous people (including Elvis Presley, John Lennon, Robbie Williams, and Mick Jagger) have declared experiencing this kind of contact with extraterrestrial beings (Pacheco, 2019). Despite the popularity of the alien abduction phenomenon, there is no proper explanation for it, which begs the question, 'Is it a psychological phenomenon, actual cases, or both?'

Approximately half of the stories about alien and UFO encounters (AUEs) involve sleep, dreams, relaxation, and sleep paralysis (SP) (Basterfield, 2005; Stockton, 2018). Therefore, almost all AUE studies suggest that this phenomenon could be closely correlated to SP, which occurs when REM sleep atonia become present during wakefulness (Daroff, 1991). When SP occurs, unpleasant and incomprehensible hallucinations often also occur. Therefore, people who experience SP might seek out nonmedical explanations, including those that tap into supernatural beliefs (Sharpless and Doghramji, 2015; Terrillon & Marques-Bonham, 2001). This explains why SP is related to a considerable fraction of AUE reports. For example, Blackmore and Cox (2000) surveyed 12 'alien abductees' and found that they encountered SP more often than two control groups. Other studies directly associate SP with AUEs, either using specific examples (McNally & Clancy, 2005; Siddiqui, Qureshi, & Ghamdi, 2018) or a general approach (Holden & French, 2002).

In this study, we consider SP as a part of the umbrella term *phase state* (PS) or *phase*. The concept of PS also includes lucid dreams (LDs), out-of-body experiences, false awakenings, and all other possible dissociative REM sleep phenomena (Raduga, 2004). Mostly, PS studies have explored LDs (i.e., dreams in which one is aware of the surrounding unreality of the situation and can influence its plot) (LaBerge, 1985). Although LDs can happen during non-REM sleep (Dane & Van de Caslte, 1984; Mota-Rolim et al., 2015; Stumbrys & Erlacher, 2012), the phenomenon takes place during REM sleep much more often. LDs differ from normal dreams due to higher activity in the prefrontal cortex with a frequency of 40 Hz (Voss et al., 2009). Although the neurobiology underlying LDs still needs to be studied (Baird, Mota-Rolim, & Dresler, 2019), some research shows its potential practical applications (Mota-Rolim & Araujo, 2013) in

Corresponding address:

Michael Raduga, Phase Research Center, Moscow, Russian Federation

Email: obe4u@obe4u.com

Submitted for publication: February 2021

Accepted for publication: April 2021

published online: July 2, 2021

training motor skills (Schädlich, 2018; Stumbrys, Erlacher, & Schredl, 2016), solving chronic pain (Zappaterra, Jim, & Pangarkar, 2013), eliminating nightmares (Zadra & Phil, 1997), and problem solving (Stumbrys, Erlacher, Schmidt, 2011; Schmidt, Stumbrys & Erlacher, 2014).

A PS that begins immediately upon awakening or falling asleep can easily be confused with out-of-body experiences (Levitan et al., 1999; Mahowald & Schenck, 2005; Raduga, 2014). The primary features of LDs, such as consciousness and REM sleep, are similar not only to SP (Dresler et al., 2012; Terzaghi et al., 2012; Voss et al., 2009) but also out-of-body experiences (LaBerge et al., 1988; Nelson et al., 2007) and false awakenings (Barrett, 1991). These states are similar, and their appearance in people's lives is highly correlated. It has been reported that 88% of humans have experienced at least one type of PS at least once, with 43% of people experiencing PSs fairly often (Raduga, Kuyava, & Sevchenko, 2020).

Gackenbach and LaBerge were the first to point out a possible correlation between LDs and AUEs (1988). This idea was supported by Green (1990) and another of Gackenbach's articles (1989). The AUE phenomenon is not only familiar to PS practitioners in theory, but they even use the *alien abduction technique* to induce PSs. This means that many PS practitioners are fully aware of the correlation between AUEs and PSs, as they use 'aliens' for their goals. To use this technique, one needs to imagine that 'aliens' hold one's legs and pull their body from their bed, which could cause dissociation during subwaking states, especially upon awakening (Raduga, 2014).

However, familiarity with AUEs among PS enthusiasts does not explain how AUEs happen to the general population. If people do not fabricate AUE stories, these experiences could be very vivid in terms of perceptions because people separate them from ordinary dreams and the imagination. This perception quality could be another sign of PS. For example, in one study, 139 volunteers were asked to induce PS and then imagine themselves being in the real world. As a result, 13% achieved hyper-real sensations that overcame their usual perceptions during wakefulness (Raduga, Zhunusova & Shashkov, 2020). In another similar study, 14% of volunteers ($N = 118$) achieved the same outcome by spinning while in a PS (Raduga, Shashkov & Zhunusova, 2020).

Considering the above facts, at least some bedtime AUEs could be a form of PS. Though previous articles have shown this to be possible only in theory, this idea has been demonstrated in an unpublished pilot study. In that study, 20 volunteers (70% males) with good sleep who were mostly inexperienced with PSs were gathered in Los Angeles, CA, for three consecutive days. They were instructed to enter a PS and, if successful, to try to encounter aliens or UFOs. During the next two weeks, seven volunteers were able not only to induce PS but to achieve a total of 10 AUEs (Raduga, 2011). However, this experiment included a small sample and lacked detailed data. We decided to solve these problems by repeating similar research on a larger scale.

The central hypothesis of our study was that AUEs could be emulated through PSs (i.e., states of REM sleep with consciousness), and those reports could be closer to reality in terms of absence of paradoxical events besides AUE itself. If this is true, such spontaneous experiences get more chances to be confused with reality. We invited almost ten times more volunteers than were included in the pilot study.

All of them were familiar with PSs, and they were given plenty of time to accomplish the task.

As has been discussed, SP and the fear associated with it are quite common in AUE reports of any kind. So, if AUE is a product of mixing sleep stages with reality (and if it could be reproduced by one's will), we should often see SP in successful reports. Therefore, our secondary hypothesis was that SP would be mentioned in successful AUE reports more often than in unsuccessful reports.

Possible PS and AUE correlations have been discussed in previous scholarly articles, but these were based solely on theoretical suggestions. The present research explores a similar correlation using an experimental technique. Although the goal of the study is to show a possible correlation between AUEs and PS and not to derive any specific figures, its results could provide useful knowledge about AUE phenomenon in general, reviling its mechanisms. Also, it will provide insights into PS nature. Furthermore, and most importantly, it will help us to better understand human culture, because AUE is frequent in numerous books, movies, and even in different religious cults.

2. Methods

2.1. Research resource

This study was conducted from February 2, 2019, to April 18, 2020, in the form of a field experiment. The Project Elijah website, which unites hundreds of PS practitioners from around the world, was used as the primary tool for collecting data. Project Elijah continually conducts various tests related to PSs and reports the results, which promotes the gathering of statistical data. This online resource became available on November 29, 2018, and is available in English (pro.obe4u.com) and Russian (pro.aing.ru). The present study was conducted using the Russian version.

2.2. Volunteers

This study involved 152 volunteers, 41% of whom stated that they had experienced 100 or more PSs in their lifespan. After registering at Project Elijah, volunteers agreed to provide their personal data, including their contact information and photos. According to ethical and legal standards, through an online form, all volunteers provided their consent to take part in the studies and assume responsibility for any adverse consequences resulting from completing the assignments. Also, because PSs comprise a little-studied area and because participants performed the tasks unsupervised, all volunteers confirmed that they had no physiological or psychological issues that could be affected by PS. Also, practitioners under 18 years old were prohibited from participating in the study. No material rewards were provided to any volunteers. Since the study was accomplished by an independent research team which has no institutional review board and the study itself was a voluntary, it has no ethical approval.

2.3. Experimental task

According to the task instructions, the volunteers had to induce PS by any method of their choosing (1) and then try to find or summon aliens or UFOs (2). Regardless of whether an AUE occurred, the volunteers had to memorize all the events (3). After attempting to complete the task in at

least one PS, the volunteers had to report their experiences (whether an AUE occurred or not) on the Project Elijah website as soon as possible (4). Participants needed to describe their experiences in detail, including the method of PS induction, the task itself, and how the PS ended.

The volunteers could try the task one or more times and were to provide a report only for the most significant case. They could attempt to perform the task anywhere from one day to 14 months after the experiment began, depending on their access, which was granted based on their completion of previous experiments for the project.

After receiving the reports, the Project Elijah team checked them for compliance with the instructions. If practitioners' reports were accepted, they gained access to the subsequent studies. If reports were not accepted, volunteers were asked to repeat the assignment or to clarify some details. The volunteers did not have access to each other's reports because allowing such access could have affected the quality of the results.

2.4. Statistical analysis

The narrative reports were digitalized, and these final data were analyzed by contingency tables and Chi-square tests in JASP (Version 0.11.1). The analysis included all criteria and their pairings: AUE general status, AUE detailed status, fear and SP, paradoxical status (realness of the events), gender, number of PS experiences, PS induction method, and PS ending type. The level of significance was set at $\alpha = .05$, and Bonferroni corrections were employed as post-hoc tests. Where appropriate, non-applicable data (n/a) were excluded from the tables during the analysis. Paradoxical status was classified via subjective estimations: minimum amount or absence of paradoxical or dream-like events and objects in PS. If a report could look close to reality, besides PS inducing actions and AUE manifestation, it was counted as probable to be mixed up with reality in everyday life conditions.

Volunteers were divided into categories based on the number of PSs experienced in their lifetimes: <4, 4-10, 11-30, 31-100, 101-500, > 500, n/a (other or unclear options). PS entries were also grouped according to the following simplified classification of PS methods (Raduga, 2004; Raduga, 2020): *indirect* (upon awakening), *direct* (without sleep, upon falling asleep, or immediately after falling asleep), *ld* (becoming conscious in a dream plot), *n/a* (other or unclear options). Finally, PS endings were divided into the following categories: *fake* (false awakening), *outer* (awakening because of external sounds or irritations), *force* (awakening against one's will), *self* (deliberate awakening), *dream* (falling asleep), *n/a* (other or unclear options).

3. Results

Reports from 152 volunteers (54% males) were accepted; one report was submitted per person. Of the reports, 114 (75%) contained descriptions of successful AUEs. The data show that 23 volunteers (20% of AUE cases and 15% overall) achieved relatively realistic experiences that contained less-paradoxical dreamlike events. Abridged versions of the reports can be found in Appendix 2.

Of the volunteers, 3% experienced SP, all of whom successfully achieved an AUE. Also, of the 17% of the volunteers who experienced fear, only one person did not achieve an AUE. The χ^2 -test results show a statistically significant re-

Table 1. Fear and/or Sleep Paralysis Distribution of AUE Status.

Fear and/or Sleep paralysis	AUE (N = 114, 56 f, 58 m)	non-AUE (N = 38, 24 f, 14 m)	Total (N = 152, 80 f, 72 m)
Appearance	27 (24%)	1 (3%)	30 (22%)
Absence	87 (76%)	37 (97%)	77 (55%)

Note. AUE = alien and UFO encounters.

lationship between AUE and SP/fear, $\chi^2 (1, N = 152) = 8.406$, $p = .004$. Furthermore, the post-hoc test results showed significant relationships for the AUE and SP/fear pair ($p_{\text{bonferroni}} < .001$) and the non-AUE and SP/fear pair ($p_{\text{bonferroni}} < .001$). These data are depicted in Table 1.

SP was experienced in less-paradoxical AUEs by 13% of the volunteers, whereas only 2% of the volunteers experienced SP in more paradoxical AUEs. The χ^2 -test showed a statistically significant relationship between AUE paradoxical status and SP, $\chi^2 (1, N = 114) = 5.150$, $p = .023$. Post-hoc tests showed significant relationships in the AUE less-paradoxical status and SP pair ($p_{\text{bonferroni}} < .001$) and in the AUE more paradoxical status and SP pair ($p_{\text{bonferroni}} < .001$). All cases with both SP and fear were accompanied by less-paradoxical AUEs. These data are depicted in Table 2.

Other details for successful AUE cases are as follows: For 61%, 'aliens' looked as expected from fiction movies and books; for 4%, 'aliens' were invisible, but the volunteers somehow knew it was them; for 19%, 'aliens' looked like ordinary people, but the volunteers somehow knew it was them; for 39%, only visual contact with 'aliens' was experienced; 26% managed to talk with 'aliens' but did not have any physical contact with them; 11% encountered physical contact with 'aliens' but did not talk to them; 12% talked to 'aliens' and had physical contact with them; 28% encountered UFOs; 10% were inside a UFO at some point; and 3% flew on a UFO. These data are depicted in Table 3.

The χ^2 -test analysis did not show any statistically significant differences between general or detailed AUE status and gender, PS induction method, practitioners' experience, and PS ending type.

Table 2. Sleep Paralysis Distribution of Successful AUE.

Sleep paralysis	AUE paradoxical status		Total (N = 114, 56 f, 58 m)
	Improbable (N = 91, 45 f, 46 m)	Probable (N = 23, 11 f, 12 m)	
Appearance	2 (2%)	3 (13%)	30 (22%)
Absence	89 (98%)	20 (87%)	77 (55%)

Note. AUE = alien and UFO encounters; Improbable = AUE that had more paradoxical dreamlike events; Probable = AUE that had less-paradoxical dreamlike events.

Table 3. Features of Successful AUE.

Features	AUE paradoxical status		
	Improbable (N = 91, 45 f, 46 m)	Probable (N = 23, 11 f, 12 m)	Total (N = 114, 56 f, 58 m)
Sleep paralysis	2 (2%)	3 (13%)	5 (4%)
Fear	19 (21%)	6 (26%)	25 (22%)
Sleep paralysis and fear	0 (0%)	3 (13%)	3 (3%)
Sleep paralysis or fear	21 (23%)	6 (26%)	27 (24%)
'Standard' aliens	54 (59%)	16 (70%)	70 (61%)
Invisible aliens	3 (3%)	1 (4%)	4 (4%)
Humanlike aliens	19 (21%)	3 (13%)	22 (19%)
Only visual contact	34 (37%)	10 (43%)	44 (39%)
Talking	36 (40%)	8 (35%)	44 (39%)
Touching	20 (22%)	7 (30%)	27 (24%)
Talking and touching	10 (11%)	4 (17%)	14 (12%)
UFO encounter	29 (32%)	3 (13%)	32 (28%)
Inside UFO	12 (11%)	0 (0%)	12 (11%)
Fly on UFO	3 (3%)	0 (0%)	3 (3%)

Note: AUE = alien and UFO encounters; Improbable = AUE that had more paradoxical dreamlike events; Probable = AUE that had less-paradoxical dreamlike events.

4. Discussion

Due to the similarity between AUE and PS phenomena, we hypothesized that they could have the same neurophysiological nature. This could be true, at least for cases in which AUE starts from one's bed. To test this idea, we asked PS practitioners to willfully attempt to emulate AUEs. The outcomes of this study could improve the general understanding of some supernatural parts of human culture.

4.1. Hypotheses confirmation

Our central hypothesis stated that the PS practitioners would achieve AUE in REM sleep and it could be close to reality in terms of absence of paradoxical events. It appeared that the task was relatively simple for the volunteers, and, as a result, about three-quarters of them were successful in general. Although most of the volunteers succeeded, most of their reports were too paradoxical in terms of similarity to possible real AUEs in wakefulness. In any event, we gathered reports that could be subjectively considered as being relatively similar to real AUEs.

Our secondary hypothesis was that SP would be more prevalent in successful AUE reports than in unsuccessful

reports. There were only a few cases of SP, but they all contained an AUE. There were more cases of fear, only one of which did not contain an AUE. Moreover, SP was more common in these cases, especially when a less-paradoxical AUE was involved. These secondary results add credibility to the primary goal of the study, as the obtained AUE reports looked even more similar to 'actual' reports.

Therefore, our primary hypothesis has been confirmed: It appears that bedtime alien and UFO encounters (as well as alien abductions) can be emulated based on one's will and deliberate actions. However, we do not know the specific probability of this occurring because the present research focused on the concept in general. However, now it has been shown to be possible in practice rather than only in theory.

4.2. Mechanisms underlying AUE

We still do not know precisely how the PS space works or how it emulates sensations, which are sometimes hyper vivid. We know how to control PSs and to translocate and find objects in them only in practice (Raduga, 2014). The volunteers who took part in our study used these techniques to find 'aliens' in PSs. For example, they could summon them or focus on finding them around corners. Sometimes, when PS scenes started from one's bed, it was enough for the practitioner to merely imagine aliens in the room before getting up and opening their eyes. Perhaps the same algorithm plays a central role in AUE phenomena when people spontaneously encounter PS.

For example, after getting up from the bed during false awakenings, (which are very common) (Raduga, Kuyava, & Sevchenko, 2020), a person could occasionally think about an AUE or recall it. This is especially likely if this person had an interest in UFOs or other supernatural phenomena. As for the PS space, it could be a signal to emulate this expectation exactly as our volunteers did. If AUE in a spontaneous PS starts upon falling asleep or/and ends up by awakening, theoretically it could be hard to explain all the events by some sort of dreams, because no paradoxical dreams were observed before or after. The only difference here is that the PS practitioners who took part in this study were fully aware of the actual situation, whereas ordinary people might not be. The same thing could happen after encountering SP or out-of-body sensations, as these phenomena have a similar physiological basis.

Because sensations can be very real and because AUEs can be unpleasant, even PS practitioners experience fear and paralysis. If understanding the situation did not help these practitioners, then it would not be surprising for ordinary people to experience shock due to such events. As such, they could consider AUEs as real experiences, as this might be the only explanation they can conceive.

4.3. Discussing AUE phenomenon

The most important outcome of the study is the idea that most or some 'actual' AUE reports could simply be another type of PS because AUEs and PSs can be reproduced in very similar ways.

Considering that most of the human population has experienced a PS in one form or another, it is no surprise that PS plots sometimes mimic irrational or mystical expectations. This is reasonable, as most of the people do not have enough knowledge to separate vivid dream experiences

from reality. Billions of people encounter PSs, and most of them are familiar with AUEs from movies, mass media, and books. Therefore, it seems very reasonable to assume that these two factors sometimes come together and mislead society.

Surely, some AUE reports are fabricated, but it is likely that some of them are real, especially if we consider the results of the present study. This means that some actual 'abductees' did not make up their stories; they simply lacked rational knowledge because it is relatively unpopular in culture. Therefore, our findings might indicate that bedtime AUEs are a side effect of insufficient education systems, especially in psychological, psychophysiological, and philosophical directions. AUE maybe a direct consequence of the fact that PS in different forms is frequent among general population (literally billions of people encounter it), but there is still not enough information about it.

4.4. Conclusions and Directions for Future Studies

The results of the present study show that bedtime AUEs can be deliberately emulated during REM sleep and can mimic reality. As such, ordinary people might spontaneously enter PSs, unintentionally have an AUE, and confuse it with reality. This might be the case every time an AUE starts during sleep or while in a state of relaxation. Extraterrestrial civilizations, if they exist, better escape seeing us from bedrooms, for not being confused with dreams.

To explore the hypothesis more, it would be useful to compare massive databases of AUE and dream reports. Also it could be interesting to instruct people with AUE to have PS as well and even emulate their stories in there. In this case, we would compare PS and AUE reports from the same sources.

Other bedtime religious, paranormal, or mystical encounters could be explained in the same way that at least some bedtime AUEs were explained in this study. Some of these occurrences could be emulated in the same way in future research. Our findings aid the general understanding of the human brain, especially regarding the sleep process and its connection to consciousness. Therefore, our results help some irrational parts of our culture to become more reasonable and understandable.

Acknowledgment

The authors are grateful to all of the Project Elijah supporters and participants. We appreciate their contribution to our research. The authors would especially like to thank Rinat Muslimov, Vladimir Agafonov, and Vladislav Aksyuchits for providing great support.

References

Appelle, S. (1995). The Abduction Experience: A Critical Evaluation of Theory and Evidence. *Journal of UFO Studies*. 6. 29–78.

Baird, B. & Mota-Rolim, S. & Dresler, M. (2019). The cognitive neuroscience of lucid dreaming. *Neuroscience & Biobehavioral Reviews*. 100. 10.1016.

Barrett, D. (1991). Flying dreams and lucidity: An empirical study of their relationship. *Dreaming*. 1. 129-134.

Basterfield, K. (2005). Australian Abductions: a catalogue of Cases. Retrieved from <https://www.project1947.com/kbcat/kbabduct0505.htm> .

Blackmore, Susan & Cox, Marcus. (2000). Alien Abductions, Sleep Paralysis and the Temporal Lobe. *European Journal of UFO and Abduction Studies*. 1. 113-118.

Cassan, Arnaud & Kubas, D & Beaulieu, Jean-Philippe & Dominik, Martin & Horne, K & Greenhill, J & Wambsganss, J. & Menzies, John & Williams, Andrew & Jorgensen, Uffe & Udalski, A & Bennett, D & Albrow, M & Batista, Virginie & Brillant, Stephane & Caldwell, J & Cole, A. & Coutures, Christian & Cook, Kem & Wyrzykowski, Lukasz. (2012). One or more bound planets per Milky Way star from microlensing observations. *Nature*. 481. 167-9.

Clark, Jerome. (1997). *The UFO Book*. Visible Ink.

Colvin, Terry W. (2004, March 18). UFOs And Fairies/Legends/Supernatural - Pt. I. Retrieved from <http://ufoupdateslist.com/2004/mar/m19-001.shtml> .

Dane, J., Van de Caslte, R. (1984). A comparison of waking instruction and posthypnotic suggestion for lucid dream induction. *Lucidity Letter* 3.

Daroff, R.. (1991). *The International Classification of Sleep Disorders: Diagnostic and Coding Manual*. *Neurology*. 41. 160-160.

Dresler, M., Wehrle, R., Spormaker, V. I. et al. (2012). Neural correlates of dream lucidity obtained from contrasting lucid versus non-lucid REM sleep: a combined EEG/fMRI case study. *Sleep*. 35:1017–1020.

Filkin, David; Hawking, Stephen W. (1998). Stephen Hawking's universe: the cosmos explained. *Art of Mentoring Series*. Basic Books. p. 194.

de Fontenelle, Bernard le Bovier (1990). *Entretiens sur la pluralité des mondes [Conversations on the Plurality of Worlds]*. University of California Press.

Gackenbach, Jayne. (1989). From Lucid Dreaming to Pure Consciousness: A Conceptual Framework for the OBE, UFO Abduction and NDE Experiences. *Lucidity Letter*. 10.

Gackenbach, J.I. & LaBerge, S. (Eds.) (1988). *Conscious mind, sleeping brain: Perspectives on lucid dreaming*. N.Y.: Plenum.

Green, C. (1990). Waking dreams and other metachoric experiences. *Psychiatric journal of the University of Ottawa*. 15. 123-8.

Hart, Michael. (1975). Explanation for the Absence of Extraterrestrials on Earth. *Quarterly Journal of the Royal Astronomical Society*. 16. 128.

Holden, Katharine & French, Christopher. (2002). Alien abduction experiences: Some clues from Neuropsychology and Neuropsychiatry. *Cognitive neuropsychiatry*. 7. 163-78.

LaBerge, S. (1985). *Lucid dreaming. The power of being awake and aware in your dreams*. Los Angeles, CA: Tarcher.

LaBerge S., Levitan L., Brylowski A., & Dement W. (1988). "Out-of-body" experiences occurring during REM sleep. *Sleep Research*. 17.115.

Levitan, L., LaBerge, S., DeGracia, D.J., & Zimbardo, P. (1999). Out-of-body experiences, dreams, and REM sleep. *Sleep and Hypnosis*. 1. 186-196.

Mahowald, M. W., & Schenck, C. H. (2005). Insights from studying human sleep disorders. *Nature*. 437: 1279–1285.

Marov, Mikhail. (2015). *The Structure of the Universe. The Fundamentals of Modern Astrophysics*. pp. 279–294.

McNally, Richard & Clancy, Susan. (2005). Sleep Paralysis, Sexual Abuse, and Space Alien Abduction. *Transcultural psychiatry*. 42. 113-22.

Mota-Rolim, S. A., & Araujo, J. (2013). Neurobiology and clinical implications of lucid dreaming. *Medical Hypotheses*. July, 2013. 1-6.

- Mota-Rolim, S.A., Brandão, D.S., Andrade, K.C., de Queiroz, C.M.T., Araujo, J.F., de Araujo, D.B., Ribeiro, S. (2015). Neurophysiological features of lucid dreaming during N1 and N2 sleep stages: Two case reports. *Sleep Science*. 4, 215.
- Nelson, K., Mattingly, M., & Schmitt, F. (2007). Out-of-body experience and arousal. *Neurology*. 68. 794-5.
- Pacheco, George. (2019, November 21). 10 stars how believe they had alien encounters. Retrieved from <https://watchmojo.com/video/id/30702> .
- Raduga, Michael. (2004). Вне тела [Out-of-Body]. Moscow: Sputnik +. < <http://www.ozon.ru/context/detail/id/20300586> >
- Raduga, Michael. (2011, October 25). Alien Abduction Experiment. Retrieved from <https://research.obe4u.com/ufo-experiment/>
- Raduga, Michael. (2014). The Phase: Shattering the Illusion of Reality. CreateSpace Independent Publishing Platform. Part III.
- Raduga, Michael. (2020). Simple classification of lucid dreaming techniques and methods. Manuscript submitted for publication.
- Raduga, Michael & Kuyava, Oleg & Sevchenko, Natalia. (2020). Is there a relation among REM sleep dissociated phenomena, like lucid dreaming, sleep paralysis, out-of-body experiences, and false awakening?. *Medical Hypotheses*. 144.
- Raduga, Michael & Shashkov, Andrey & Zhunusova, Zhanna. (2020). Increasing perception vividness during lucid dreaming by spinning: A pilot study. *Dreaming*, 30(4) .
- Raduga, Michael & Zhunusova, Zhanna & Shashkov, Andrey. (2020). Increasing perception vividness during lucid dreaming by imagining wakefulness. *International Journal of Dream Research*. 13(2) .
- Richardson, Matthew (2001). *The Halstead Treasury of Ancient Science Fiction*. Rushcutters Bay, New South Wales: Halstead Press.
- Schädlich, M. (2018). Motor learning in lucid dreams – quantitative and qualitative investigations. Thesis. January, 2018. 1-139.
- Sharpless, Brian & Doghramji, Karl. (2015). *Sleep Paralysis: Historical, Psychological, and Medical Perspectives*. Oxford University Press
- Schmidt, S. C., Stumbrys, T., & Erlacher, D. (2014). Dream characters and the dream ego: An exploratory online study in lucid dreams. *Dreaming*, 24(2), 138.
- Siddiqui, Javed & Qureshi, Shazia & Ghamdi, Abdul. (2018). Alien Abductions: A Case of Sleep Paralysis. *Sleep and Hypnosis*. 20. 144-147.
- Stockton, Chrissy. (2018, June 6). 100+ Alien Abduction Stories That Will Make You Believe. Retrieved from <https://thoughtcatalog.com/christine-stockton/2018/06/alien-abduction-stories/> .
- Stumbrys, T., & Erlacher, D. (2012). Lucid dreaming during NREM sleep: Two case reports. *International Journal of Dream Research*. 5. 151-155.
- Stumbrys, T., Erlacher, D., & Schmidt, S. (2011). Lucid dream mathematics: An explorative online study of arithmetic abilities of dream characters. *International Journal of dream research*, 4(1), 35-40.
- Stumbrys, T., Erlacher, D., & Schredl, M. (2016). Effectiveness of motor practice in lucid dreams: a comparison with physical and mental practice. *Journal of Sports Sciences*. 34. 27-34.
- Terrillon, Jean-Christophe & Marques-Bonham, S.. (2001). Does recurrent isolated sleep paralysis involve more than cognitive neurosciences?. 15. 97-123.
- Terzaghi, M., Ratti, P. L., Manni, F., & Manni, R. (2012). Sleep paralysis in narcolepsy: more than just a motor dissociative phenomenon? *Neurological Sciences*. 33: 169–172.
- Voss, U., Holzmann, R., Tuin, I., & Allan Hobson, J. (2009). Lucid Dreaming: A State of Consciousness with Features of Both Waking and Non-Lucid Dreaming. *Sleep*. 32. 1191-200.
- WHO. NCD fact sheet [Internet]. 2018 [cited 2019 Oct 18]. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
- WHO. NCD fact sheet [Internet]. 2018 [cited 2019 Oct 18]. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
- WHO. NCD fact sheet [Internet]. 2018 [cited 2019 Oct 18]. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
- WHO. NCD fact sheet [Internet]. 2018 [cited 2019 Oct 18]. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
- WHO. NCD fact sheet [Internet]. 2018 [cited 2019 Oct 18]. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
- WHO. NCD fact sheet [Internet]. 2018 [cited 2019 Oct 18]. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
- Zadra, A., & Phil, R. (1997). Lucid Dreaming as a Treatment for Recurrent Nightmares. *Psychotherapy and psychosomatics*. 66. 50-5.
- Zappaterra, M., Jim, L., & Pangarkar, S. (2013). Chronic Pain Resolution After a Lucid Dream: A Case for Neural Plasticity? *Medical Hypotheses*. 82. 10.1016.

Appendix. Less-paradoxical AUE reports with skipped PS entries, PS endings, and those not related to the primary topic details. Translated from Russian.

Report #3, February 18, 2019 (Female)

I went to the living room, imagining that they were there, but they were not there. Then, I went out onto the porch and began going down to the street, with clear certainty that they were there. I opened the doors (I opened it with purpose but didn't go through), and, yes, a group of three little people stood in my yard. Only on the large lawn on the left, where the playground is located in real life, there was a flying saucer. I felt no fear, only interest. Little men with smooth skin of blue color, human height, with non-standard large heads and huge, bulging eyes of black color. Their arms were long. Their fingers were also elongated, four fingers on each hand. I went up, and the phrase 'Don't be afraid; we are friends' appeared in my head, which I clearly heard, considering it to be telepathy. Only one being contacted me – apparently, he was their 'leading specialist.' The rest (two) stood behind and did not come up. The alien came up and scanned me with some object that looked like a roulette for walking dogs, but from inside it came a ray of bright blue light. I watched with interest while rubbing my hands and blowing into my palms. After that, he took my left hand and brought a long glass rod to the inner bend of my elbow (I didn't feel anything, but a red liquid that reminded me of blood appeared in the rod). By the way, the skin of his hand was rather cold. I bit my lip and tongue. Next to the other two was a small hairless dog who bounced merrily. Her skin was lilac (marvelously). After all the procedures, I was invited to the ship with a gesture of a long hand (I still thought about what aliens I had brought up). As soon as I approached him, I was blinded by a very bright light, like from a searchlight. My vision was gone, and I felt dizzy and light. I tried to cope with this condition but failed.

Report #14, May 9, 2019 (Male)

I began to listen, wanting to hear aliens outside the door. Almost immediately, I began to hear their unnatural grunts. I didn't imagine their appearance since it would be interesting to see what my brain would make up for me. With the confidence that by opening the door, I would see the aliens there, I immediately did it. A shock was waiting for me outside the door! All the walls of the hall were in some kind of greenery from which hung either a dark green web or algae. In the center, there was a round table in the form of a super-technological lens, inside of which one could see the flickering of ornaments (apparently their writing). Two azure-colored organisms stood on two sides of the lens. Each one had one huge oval eye, arranged vertically. They had no limbs; they were only pulsating bodies that levitated 5 cm above the floor. Both aliens gazed at me as they kept making sounds, which I heard even outside the door. After 8-10 seconds, a lot of thin tentacles reached me from the body of one of them. It was very creepy. Nevertheless, I grabbed several of them with both hands, immediately sensing an electric shock. From this, my vision darkened, and I was in a state of sleep paralysis with subsequent awakening.

Report #15, May 12, 2019 (Female)

Having made a deepening, I went through the corridor to the front door. Opening a thin gap, I put my hand into it and pulled out a green man who was two meters tall. At first, it was an amorphous creature that turned into an alien in front of my eyes. I put my hand back and pulled out a second one that looked like the first, but it had a long tentacle, slippery and disgusting. I invited them to the kitchen to drink tea. As I went into the kitchen, I was thrown back into the body.

Report #37, September 19, 2019 (Female)

I thought I should look for them. I went outside looking around, and then I saw that three aliens were coming to my house. I saw them pretty easily. They were taller than the fence, about three meters tall. I was terrified. They looked creepy: gray, thin, and tall with big eyes, and they walked smoothly, as if they were flying. Everything around was also gray, some ominous, twilight. As I approached them, I was overcome by an animalistic fear. I turned away, trying to calm myself, but then I realized this was a phase, and I wasn't scared. I turned and saw that everything had become bright, and instead of the creepy aliens, there were green and not scary people. I walked over, starting to touch and stroke them. They were so ebony to the touch, like scaly, rough skin. On the head, for some reason, they had a yellow stripe. They tried to talk to me, but I did not understand them.

Report #41, October 7, 2019 (Male)

I had materialized three green humanoids in the same location as the plot on one of the floors of the clinic. The three sat in a circle facing me in a lotus position. They didn't react to me in any way. I tried to get in touch with them – no reaction. So they sat, without saying anything, in abeyance.

Report #56, December 4, 2019 (Male)

I am on the second floor of a country house. I want to see aliens. I look out the window and see a yellow ball. I want to enter it. However, everything is fading, and I wake up.

Report #57, December 7, 2019 (Male)

I deepened the phase a little and, imagining that extraterrestrial beings were waiting for me in the room, went into the room. There was nobody there. Then I imagined more vividly that they were in the kitchen. I heard sounds coming from there, took courage, and entered. My wife stood there and washed the dishes, and on the stove, there were pieces of bacon being fried in oil (although we are both vegetarians). But I did not give up, and, in order to better convince myself,

I asked my wife to come up to me and said that there were aliens behind the front door. Together, we went to the door. I looked through the peephole, saw only some blurry shadows and heard a sound. I opened the front door; it hit someone. I felt a little scared, but I looked behind it and saw two women – my mother and her sister. Why them, I don't have a clue. Frustrated, I began just to call for aliens aloud, as if I was trying to meet a specific person, but having not achieved success, I stopped it and started doing other things ... Having made a deepening, I decided to try again. I ran out onto the staircase and went to the door leading to the shared balcony. I imagined the spacecraft flying up to him, illuminating everything with bright light, and aliens emerged from it. Focusing on this image, I went out onto the balcony, but I saw there, from nowhere, an iron staircase leading down, which someone was going down, looking like quite a man in a blue jacket. I called him several times, but he did not reply. Having focused all my attention on him, I was able to better examine the details and go a little deeper despite the fact that the character was far away. In the end, he turned his head. He turned out to be an Asian; he looked Japanese. I went down to him and asked if he was an alien. He shook his head affirmatively and said that he was not supposed to talk to me and that, in general, he did not see me but only heard me. On this nonsense, it was all over.

Report #61, December 16, 2019 (Female)

I move to another room with the thought that there will be aliens. It's dark in the room. On the sofa, there is a girl who looks like my sister. I ask her, 'Are you an alien?' She replies, "No." Then, I go to the kitchen, again with the thought that there will be aliens. I go in, and there is nobody there. I think we should try again. I go out and go in again with the intention that there will be aliens. I see two baggy creatures sitting at a table on chairs. It seems as if they are inside with something loose, two times smaller than a human. I ask them, 'Are you aliens?' The bigger one replied, 'Yes.' I was delighted, looking at them. The aliens looked like bags of bright colors, similar to a bag of washing powder, with hands sticking out from the sides. There are eyes and a mouth, but it seems there are no legs. They sat and did nothing; they just looked at me. I came closer and asked the first one what his name was. He answered me, but, unfortunately, I didn't remember. I went to the second one. To check, I asked again if he was an alien, and he also answered affirmatively. I also asked his name and also did not remember it. They spoke quietly, so it was necessary to approach each and bend down to hear them. The voices were male, low, and very beautiful. I asked which planet they are from. They answered that they were from Deviaty. I asked again several times to be sure, and they repeated the same thing several times, thinking that I was dumb and didn't get it right the first time.

Report #62, December 16, 2019 (Male)

I thought that people were usually abducted from bed, so I did not get up and was in no hurry. I closed my eyes and was dragged somewhere by flight while lying down as if I were pulling a beam like in films. I lost the feeling of touching the bed. I thought that now it would drag me through the walls, and it happened. But gradually, the fear intensified, and, knowing my imagination, I was afraid that aliens might be waiting for me. Having flown only a bit, I did not reach the end and woke up again falsely. Opening my eyes, I again saw the outline of my dark room, and then a white silhouette began to approach from another room. It was a humanoid, as if in a silver suit. I didn't see the face, that is, with the same success it could be a man, but since I expected an alien, I thought it was an alien. The clarity of the phase was quite low, at 60%. He came to me, then left again like in the reverse record and did this several times. I was already terribly uneasy. I closed my eyes to get rid of this. Then he cried out, I opened my eyes, and he was already opening my chest and doing something inside with tools. I was completely scared, and in my head, there was only one thought – to finish the phase as soon as possible; it was terrible. At this moment, I was stuck in paralysis, I floundered, tried to move, but failed. As a result, I woke up and couldn't fall asleep for a long time.

Report #73, January 6, 2020 (Female)

I saw an alien who was looking for me. It had the proportions of a person with an elongated head and gray skin, large eyes, and no nose. Aggressively minded, I remembered that this was a dream, but I could not get out of the plot of the dream out of fear. She tried to get through the window and couldn't do it. I hid behind a chair. He came to me, I remember.

Report #75, January 8, 2020 (Male)

I appeared in a large meeting room. There was no light, but the rows of armchairs were briefly visible. I sat in one of them, and a light appeared. Aliens were sitting in the hall; there were 8-10 of them. I got up and went to look at everyone. They all looked like people but with different skin colors. One was blue; one was gray. There was one with charcoal black skin.

Report #78, January 16, 2020 (Male)

A spot appeared on the wall, and it transformed into a fly. I tuned into aliens and sent it a mental signal. It knocked out its legs in my direction, and, after jumping onto the bed, it turned into a spider standing on its hind legs, ready to jump. Having felt fear and dislike, I decided to open my eyes. It was difficult to do, and the laughing spider in the dissolving haze of sleep jumped on a coin soaring nearby and soared up to the ceiling. Then came the understanding that this was the image of the UFO subconscious for me. Clutching at the remnants of sensations, I immediately dived back into sleep before I had time to wake up to the end and felt vibrations. I got out of my body like a haze and began to look for this strange UFO under the ceiling in the hope of inflating it even more, but my wife said that I should not strain my eyes, and for a second, I thought that I stood in reality waking her.

Report #80, January 19, 2020 (Female)

I ran to the door and around the corner along the corridor, shouting, 'Aliens! Where are the aliens? I urgently need aliens!' She herself imagined that they would appear around the corner. Around the corner, blocking the exit to the street, there was a group of sprites of a completely human nature. 'You,' I say, 'aliens?' Some denied it, but one who stood at the door admitted, 'Yes, I'm an alien.' I look at him. Tall (approximately 1 m 90 cm). His face is round, his eyes slanting a little – not like a Chinese person, but somehow unfamiliar. The neck is perhaps a little long for a man, and the shoulders are too round. The rest of the appearance is human. Gray eyes, dark hair, skin color closer to dark. A brown leather jacket with knitted inserts and a hint of a uniform.

Further such dialogue:

– Where are you from?

– Alpha Centauri.

– But why did they immediately come up with Alpha Centauri? Couldn't they come up with nothing more original? He shrugs his shoulders. 'Well, how are you doing there on Alpha Centauri?'

– Yes, as usual.

– And who are you? What do you do?

– War pilot.

– It's at home, but here?

– Same.

– Bomber?

– The fighter.

I tried to figure out why they needed fighters and asked what they were doing (with humanity) here, and most importantly, what humanity was doing in response. Maybe I didn't know something, but either I couldn't formulate the question or he didn't reply.

Report #95, January 30, 2020 (Male)

The aliens are waiting in the kitchen, I think. The doors open at night in the apartment. It is abnormally light. The handles on the doors are visible; something is wrong. It seems something is wrong. My legs didn't obey. I rubbed grafting on my hands, and I went into the kitchen. At the table, three teenagers are sitting in the shade. When it became lighter, I saw two boys looking like my sons, and a girl, my niece, with her hands and face smeared with salidol. I asked, 'Are you aliens?' The girl and one boy said 'No.' The third answered affirmatively. I learned from him that he collects information about everything. I said to him:

- Can you treat?

- No.

- Diagnose diseases?

- No.

- Do you know those?

- Yes.

- Can you call them?

Silence.

Report #98, February 1, 2020 (Male)

I saw aliens getting up from the bed after the fall. There were three of them, from about 80 cm to a meter tall (I can only guess their measurement based on the height of my bed – specifically, the height of the bed with the mattress is equal to the height of the alien to the shoulders). They had big ears, like the master Yoda from Star Wars. It was not possible to examine their faces in detail, but they had no helmets or headgear. The eyes are narrow and medium size. They stayed together in a group and said something, but I didn't understand their speech. They behaved in a friendly manner, with their unusual appearance. I didn't feel fear but rather interest. Each of them had weapons: one had a stove, the second had a stick, and the third had something like a small river trident like the ninja turtles. I even thought that their attributes were similar to the ninja turtles, but for some reason, there were three of them, and they didn't look like turtles (in particular, the head and lack of armor). But their skin was very like a turtle's, wrinkled, soft, and textured. On the hands were 3

fingers, with claws on each. I held their hands and examined them when I felt myself getting out of the phase. Also, each of them had its own skin tone: one was bluish, the second was purple, and the third was greenish.

Report #101, February 2, 2020 (Female)

I imagined an alien in the next room. I came in and saw a yellow, wrinkled humanoid sitting in an armchair. Its height is approximately 150-160 cm. Eyes are typical of an 'alien.' We went down the street. There was another man with us, who came from nowhere. The alien worked as a blacksmith cook, and they made food from iron. He was late for work and in a hurry.

Report #105, February 6, 2020 (Male)

I tried to imagine that there were aliens behind the door. I opened the door and saw only two yellow luminous dots on the wall in the darkness. I tried to strengthen their presence with the help of my imagination, but it didn't work.

Report #130, March 20, 2020 (Female)

I remembered about the aliens. I thought that it was already waiting for me in the hall, and I went there. At first, I saw him, but he hid in the shade.

– 'Show yourself in the light,' I told him, and then something jumped into the light, no larger than 15 centimeters, in a hat, in armor, which made him plump. I started looking at him.

– 'Hi,' he said in a sort of childish voice.

– 'Hi! Let me see you,' I informed him and began to examine his face. It looked like an Asian. I didn't have time to look at his suit.

Report #133, March 29, 2020 (Male)

I went out into the hall and began to wait for the aliens. Then I slowly walked down the corridor to the kitchen. And suddenly, an alien ran out and passed me. The size is very small, about 20 centimeters, like a cat, thin and small. I turned around, but he was gone. I went into the room and felt a rustle near the ceiling. I looked for a long time and noticed movement along the corner of the ceiling. It also looked like aliens.

Report #139, April 3, 2020 (Female)

I clearly thought about the aliens that I want to see. For a while, nothing happened. Then, small lights began to appear in the sky, and in the distance, a very small spaceship looking like a liner appeared. I stood on the balcony and saw three aliens coming towards me on the left through the air. Outwardly, they looked like people, only with green skin, without emotions, didn't talk, without reactions. For some reason, it all made me laugh. I thought, 'What nonsense.' They came up and tried to take me away with them carefully. One of them seemed very familiar to me. I tried to remember and woke up.

Report #142, April 7, 2020 (Male)

I walked around the apartment. I didn't see any aliens. Then I went for a walk around the yard, and I saw other people and things, but didn't pay attention and went for the goal. I saw an alien in a neighboring yard and examined his behavior. There were little creepy sensations. I hadn't met them in the phase before. It was big. It came out, about 190 cm tall, very muscular, his body completely white without contours, except his face. His eyes and nose were black. The eyes are large ovals, the mouth is small, more like a human's. The feet are dark. He came around the corner, and when he saw me, he came to me.

Report #150, April 12, 2020 (Female)

I constantly said out loud, 'Aliens, I am waiting for you!' I was very worried they would leave. I was in a hurry. On the way, I noticed a rag on the chandelier, and it moved. The vision disappeared. I tried to rotate, which helped, but not much. There was some kind of cover on me, spinning around and spinning completely immobilized. I could only look up. Hands were already visible.

Report #151, April 18, 2020 (Female)

Like a freeze-frame, it was as if I was there because I had to complete the task. I was immobile as I observed two humanoids of medium height, pale color, undetermined sex, without clothes, deep black eyes without shine, as if they knew your being completely. They were sitting by the kitchen window. I was at the door. For just a few seconds, we looked at each other, and I thought that it was my imagination and woke up.