

ORIGINAL ARTICLES

Isolated Sleep Paralysis and Lucid Dreaming: Ten-Year Longitudinal Case Study and Related Dream Frequencies, Types, and Categories

Jorge Conesa, Ph.D.

A final summary of a ten-year case study focusing on the dream experiences of a 47-year-old subject (the author, JC) who has suffered from Isolated Sleep Paralysis (ISP) is detailed. This study was undertaken in an attempt to contribute to the understanding of long-term dream naturalistic information about dream events associated with the ISP condition. A total of 5,761 dream events were recorded during 3,519 nights during the period starting on August 13, 1992, and ending on August 13, of 2002. Frequency and percentage data of dream events, including the incidence of sleep paralysis and lucid dreams, are provided. Some of these categories and types of dreams have been reported in earlier reports while testing other hypotheses (1-3). However, the present report is the final account of this subject's dreaming world and condition excluding the geomagnetic hypothesis. Finally, this report includes a description for cuing lucid dreaming while in the atonic state using Sleep Paralysis Signaling (SPS) without the use of external devices and the utilization of both a self-hypnotic induction and meditation techniques to control the anxiety and powerlessness associated with ISP. (**Sleep and Hypnosis 2002;4(3):132-142**)

Key words: *isolated sleep paralysis, sleep paralysis, lucid dreams, vivid dreams, out-of-the-body-experiences (OBEs), flying dreams, sleep paralysis signaling (SPS), self-hypnosis, zazen meditation*

INTRODUCTION

The present summary is the fourth and final report of a dream naturalistic work begun

From Greenwich University Norfolk Island, Australia and The Language and Cognition Laboratory The Northwest Language Center/EVCC/ Everett, WA USA

Acknowledgements: I am very grateful to Lucy Gillis, Co-Editor of the Lucid Dream Exchange, and to Dr. Connie Veldink, for their collegial support and ideas. My gratitude to all correspondents who participated in the two studies and to my psychology students. I am particularly indebted to KC for her invaluable assistance in coding the narratives, for embarking on the journey of thinking critically about dream experiences with me. Other dream researchers can obtain a copy of the present data set (in secured PDF-excel format) from this researcher and subject.

Address reprint requests to: Dr. Jorge Conesa, The Language and Cognition Laboratory/NLC/EVCC, 2000 Tower St., Everett, WA 98201 USA. (425) 388-9388 jconesa@evcc.ctc.edu jorgeconesa@yahoo.com

Accepted August 17, 2002

on August 13, 1992. The initial impetus for this study was to follow in the footsteps and/or heed the need expressed by other dream researchers (4-11) to conduct naturalistic observations of dream events and content: that this approach was desirable and as genuine a methodology as dream laboratory research. The interpretation of this need by this author included the recognition of an absence of long-term studies dealing with the phenomenon of Isolated Sleep Paralysis (ISP). The author, a regular experiencer of sleep paralysis for thirty-three years (since he was 14), used himself as the focus of this study while attending graduate work in neurocognition. Additionally, this

study was undertaken while testing the hypothesis that sleep paralysis events occur on geomagnetically active days. The geomagnetic data will not be included in this report and the reader is referred to that literature and relevant references for inspection (1-3). Ness's (12), Firestone's (13) and Hufford's (14) cultural cases and descriptions of ISP, the "Old Hag", were watershed readings to the author in that these descriptions almost normalized a condition he had kept a secret from his family and acquaintances. Finally, group data was also gathered as a controlled check for the single case study data. I will shift from talking in the third person to the first person when the material allows it.

ISOLATED SLEEP PARALYSIS (ISP)

ISP is an atonic state occurring in non-narcoleptic and otherwise normal sleepers. During the sleep paralysis episode dreamers become conscious of their dreaming condition with the realization that they cannot move (1,15-17). Dreamers then struggle to wake up from this paralyzed state, and some develop arousal techniques to make this possible. The case subject (JC) experienced his first episode of sleep paralysis concurrent with a so-called out-of-the-body-experience (OBE) in 1969. The indelible experience occurred while in preparation for going to sleep. The subject closed his eyes as if merely resting them, and opened them only to realize that a rough surface was proximal to his face. This surface, he realized, was the texture of the ceiling in his bedroom. Upon realizing this, instinctively, the subject "turned on his belly" and thought he "saw" his physical body sleeping about two meters below. The impression of perceiving himself to be "floating" above his sleeping body caused the subject to awaken in a sudden jolt. The rest of that evening was punctuated by several ISP episodes. Since that evening, and for the following thirty-three years until the present, the subject has lived with ISP in

regular to chronic epochs. The regularity of these events and related dream experiences coupled by the real need to begin a science of observing and quantifying these regularities prompted this study. In the next section I will summarize the methodology used since 1992 as well as changing criteria that needed to be adopted as the study progressed.

METHODS

Case Study

The focus of this study was less about dream content, than of accurately taxonomizing and keeping daily frequencies of ISP incidents and other dream events. However, dream content information was also kept, but will not be reported here. The daily frequencies of any dream event were recorded according to the guidelines described in the first report of this series (1). Dream and other dream-related events were recorded on a calendar within 20 to 40 and always within 60 minutes upon awaking. Memories of these experiences were easy to record and keep track of, especially the sleep paralysis, flying, lucid, vivid, and extra vivid dream events. Regular dreams had to be recorded soon after awakening otherwise their content and persistence was lost. The memory of regular dreams was often lost by the end of that day; however, recollections of sleep paralysis, lucid dreams, vivid, and extra vivid dreams sometimes persisted for days. Infrequently, a daily event (a cue in conversations or in a social situation) would trigger memories of a dream from the previous night which had been forgotten. These newer, displaced recollections nevertheless consisted of clear imagery and were counted as a regular dream. The reader can go to Appendix I, p. 1272 in Conesa, 1995, for a full description of these early categories (1). This categorization schema has grown to accommodate other dreaming/sleeping situations that were not anticipated even when writing that first report.

Three changes to the recording criteria deserve noting. First, from the 1995 report onward, nightmares were recorded regardless of how frequently they occurred. The final analysis of the entire ten-year study recoded these new frequencies. Second, this last report also lists the frequencies for out-of-the-body-experiences (OBEs), the feeling-of-presence (FOP), and hypnagogic hallucinations. Third, four new dream event categories were included: extra vivid, induced lucid, and controlled lucid dreams. Inducing lucid dreams was accomplished through self-hypnosis or meditation techniques and via Sleep Paralysis Signaling (SPS). The next sections introduce this technique as well as explain the use of self-hypnosis and meditative techniques to induce both sleep paralysis and lucid dreams.

Sleep Paralysis Signaling (SPS)

Through years of experiencing this state of bound lucidity, ISP, the experiencer, if he/she does not want to control the condition through pharmacological means or counseling, has to develop less invasive, more private, and more psychological coping skills to deal with his/her condition. The author has corroborated that the ISP condition, since it is correlational with lucid dreaming in a lot of cases, can be used as a natural cue for inducing lucid dreaming akin to feedback with electronic devices such as DreamLight (8), that alert the dreamer at the onset of oculo-motor activity and head motion. Thus subjects who experience SP routinely are in a unique position, a position of advantage over the average lucid dreamer or infrequent enticer of these experiences, since they can exploit the paralysis situation and use it as a launch pad, so to speak, for achieving dream lucidity. Functionally speaking, and in the context of eliciting lucid dreams, I am referring to this specific use of the sleep paralysis state to achieve these ends as Sleep Paralysis Signaling (SPS). As it is in my case, it is my hope that, barring any other serious side effects

(unbearable anxiety or prolonged insomnia), the chronic sleep paralysis sufferer can turn this condition to an experiential advantage and transform bound lucid states into lucid dreaming. Upon finding oneself in the atonic state, a reacquisition of self-awareness, SPS includes the ability to garnish and focus one's attention on some part of the body (focusing on the belly area works for me) while breathing purposely and calmly. Without going any further with this attentional discipline, or wanting to achieve lucid dreaming, the anxiety associated with SP may pass and the subject may either wake up or begin dreaming. The second phase of SPS includes similar techniques to those used for achieving lucid dreaming such as imagining the body spinning with the navel area as a center, imagining being crumbled up as if a piece of paper, falling, or floating away (18). Part of this second phase includes, for this subject, something he terms the "roll up" trick. After focusing on the navel area, the paralysis eases into any of these sensations, but more strongly on the sensation that one is being curled into a ball, very tightly, and the body then disappears into the navel region. This sensation usually precedes the experience of falling, or going through the proverbial tunnel. At the end of the tunnel, a third phase awaits the dreamer. It includes entering a lucid dream state and maintaining consciousness to the proper level of alertness so as to extend the experience of the controlled dreamscape and interact with dream images or beings. The interactions with these beings are intense and empirically real, and their full explication is outside the scope of this paper, perhaps awaiting the arrival of a different sort of science. The ultimate constraint for the duration of this controlled experience and phase is physiological, dependent on the amount of REM sleep allotted for that particular ultradian cycle in the evening. Until someone devises a means to prolong REM sleep periods, these exotic dream episodes will remain short, sweet, and fleeting for most dreamers. Thus,

throughout these three phases, consciousness is fading incrementally, from the first awareness of paralysis to the last flying dream. Nevertheless, when SPS is used for the specific purpose of inducing these states, then LDs, and OBEs ensue and a greater degree of awareness and control of the dreaming experience is achieved. My speculations on why this is the case are that:

1) The atonic state itself intensifies consciousness/awareness, more so than the average lucid dream experience since now the challenge of body paralysis and waking from it is a dire issue and even a desperate act. Regardless of whether SPS is pursued in a disciplined manner, or spontaneously achieved, even this anxious state is an increment of consciousness as self-awareness.

2) Having conquered the paralysis by a disciplined attentional exercise (disciplining the attention gained by naturally occurring paralysis) and controlled breathing, the dreamer gains greater confidence in exploring his/her conscious/lucid dreaming condition (a positive feedback effect).

3) Pursuing further control of a dreaming-body image or representation that is already easily fabricated by the naturally occurring paralysis encourages using this image to "move" within the dreamscape. There is a second opportunity for positive feedback loops with regard to maintaining a conscious state in the sense that acquiring a so-called "dreaming body" enhances the illusion of mobility and thus control. (A flying dream may be another example of this: If I am flying in my dream I must have a 'body' to fly with. If I have a body to fly with, then I must be able to control that body.)

4) For the chronic sufferer of SP, inducing lucid dreams in any other way may be harder or more convoluted a task than simply waiting for the next bout, or series of natural SPs to occur. The very knowledge that another SP event will occur, and that all one has to do is use it as a signal to achieve LDs (through SPS),

psychologically primes or predisposes the subject to look forward to these events thinking that each time, the fear is lessened and the control is greater.

To be fair, SPS only increases the probability that SP will produce more positive outcomes than its usually reported anxiety, fear, or terror. Depending on the psychological state of each individual, any spontaneous SP can turn into these more negative conditions without the possibility of being able to remember or practice the entire SPS sequence. Something else needs to be in place prior to entering the sleep states that will increase the probability of entering the SP condition in an already calm and regulated psychological attitude. The next section describes a simple self-hypnotic induction and meditation that have been successfully used in creating this more benign state.

Self-Hypnosis

The author is a hypnotherapist, and has naturally employed self-hypnosis when he was aware that sleep paralysis might be commencing. He and other subjects, for example, report odd body sensations, almost electrical, prior to experiencing SPs and coinciding with being abnormally tired or jet-lagged. Knowing this, he decided to use a simple self-hypnotic induction to ease his fears of the anticipated experience. The induction is a combination of relaxation and attentional sequences involving imagery of a fog-like (purple) and pacifying energy source entering my body through my toes and finally engulfing me as a cocoon. As the imagery progresses, anchoring techniques have been incorporated into this sequence in order to induce relaxation of muscle groups from the toes to the crown of the head. Nowadays, I only have to do this sequence as imagery to achieve relaxation and well-being. Earlier in this practice, a few years back, practicing this particular induction

employed the suggestion that if I ever experienced the paralysis I would not be afraid and I would eventually fall asleep without consciousness. These suggestions are no longer required in the imagery-only sequence since I have apparently conditioned this assumption into the process without verbal reminders. The result of this practice is entering into the SP state with the greater confidence that I am in control of this situation and, more importantly, that I experience little or no anxiety. In the last four years or so, this practice, and/or the meditation described in the next section, has resulted in greater consciousness-fluidity and movement between the phases described above under the SPS section.

Meditation

A serendipitous event precipitated the use of meditation as a gentle transition between waking and dream paralytic states. The author seriously pursued zazen practice for several years and toward the later part of his training, increasingly so, sleep paralysis would occur coinciding with deeper and deeper meditational states (and, I must confess, with falling asleep while meditating!). Since practicing under these circumstances was too distracting, the author ceased zazen practice altogether. However distracting practicing meditation under these circumstances was, nevertheless, it created the condition that now the SP experience was free of anxiety and, once again, I was in control. Since that year (1986) I have incorporated a simple meditation done in bed while waiting for sleep to come. For some reason, I have adopted the induction for those days when I think SP is likely to occur and the meditation practice I reserve as a way of purposely inducing SPs or LDs when I feel alert and rested. For this meditation I used a concentration/attentional exercise, which entails finding a comfortable position lying prone on my back (a position reported to induce SPs to begin with) with eyes closed.

Then I look into the darkness, "through" the back of my eyelids, and imagine that the darkness I perceive and the minutia of visual imperfections that accompany this sort of vision create a three-dimensional space. Additionally, I am regulating my breathing, first by starting out with deep cleansing breaths, and then by allowing a shallow, unconscious breathing to replace the first type. The same breathing is utilized during the self-hypnosis. If I persist with the meditation, unusual imagery replaces the feeling that I am seeing three-dimensional space ahead of me (I imagine this sort of exercise is similar to creating a Ganzfeld without Ping-Pong balls or a source of light.). Next, the experiences of going through tunnels, squeezing through a tight opening, spinning, hearing a buzzing sound, hearing clicks and crackles, and sometimes experiencing SPs let me know that I have succeeded in carrying everyday awareness into a sleep state. (Please refer to Dr. James H. Austin for a detailed and wonderful exploration of all preceding sleep-imagery-lucid dreaming dynamics-19.) These experiences are also concomitant with the induction exercise or with falling asleep prior to experiencing SPs. To reiterate, both techniques achieve similar ends with achieving greater relaxation, less anxiety and greater control over the unfolding events. In either case, self-hypnosis or meditation, it is possible to simply fall asleep without accomplishing the more rare lucid states.

This last portion of the methods I will now devote to describing three other experimental techniques for group sampling. These groups and sub-tests were incorporated in the later stages of this study (the last five years) as a way of obtaining experimental, and thus more objective, records to be compared to the case study.

Questionnaires

We posted a web page that included a simple questionnaire in order to collect self-selected

impressions and experiences of SPs and related phenomena. Since the World Wide Web admits contributions from different countries these entries were sent to us from at least five countries, with the United States, Canada and UK being the originators of most of these entries. Forty-four questionnaires were properly completed.

Surveys

Surveys were based on the same questionnaire posted on our website. The objective behind this second approach was to obtain a control population against which to check the case study, questionnaires and the narratives. The contributors of these surveys were not self-selected with the ISP condition but rather were psychology students, all volunteers, from three courses being taught at EVCC in the fall of 2002. These subjects were naive as to the purpose of this form and experiment. Surveys were completed in class during ten minutes of experimental time with minimal guidance. However, subjects were told that they were practicing doing an experiment and that these data would be used for other class projects throughout the quarter. Upon completing all surveys students were debriefed and were told the real reason behind doing this task. Ninety-two surveys were properly completed.

Narratives

Self-selected subjects who knew they had ISP or who contributed information for a diagnosis of ISP wrote the narratives. These narratives were sent, as in the case of the questionnaires, via email communication. These records had to be codified in order to extract the dream phenomena that were to become the categories and types in order to do a comparison with the information in the questionnaires and the case study. Two raters, the author and a student co-researcher, decided

how to code these narratives. Because of their reported saliency it was very easy to code ISPs, LDs, FOPs, and the hypnagogic hallucinations. There was a disagreement between raters, mainly as a confusion that emerged when it came time to categorize some of the hypnagogic phenomena. The co-researcher, KC, felt that it was difficult to decide whether a subject was plainly hallucinating prior to falling asleep or whether the hallucination was hypnagogic and thus presumably sleep related. The compromise reached was that we were going to assume that if the narratives explicitly declared that the subject had gone to bed, closed their eyes, and hallucinated, then this was a hypnagogic experience. Fifty narratives were clear and unambiguous about dream phenomena after being read by both raters. The entire sample, 186 subjects, was composed of 144 females and 37 males. Five subjects gave no sex information in the narratives.

RESULTS

Case Study

Categories were initially chosen and based on empirical criteria derived from the pertinent literature and were hypotheses to be retested. In the conclusion part of this report there will be a discussion of whether or not this categorization scheme is reflected in the results. These categories pertain to the main, original or added later, taxonomy alluded to earlier (Appendix I in Conesa, 1995--1). For example, 'lucid dreams', 'flying dreams', or 'ISPs' are categories. All categories shown are exclusive. (Entries in one category are not represented in the others-independent.) I will use the term types as a subclass of a given category. For example, 'vivid dreams' is a category and one type under this category is 'extra vivid dreams'. The same applies to the three different types of lucid dreams reported here (spontaneously occurring, induced and controlled).

As Tables 1 and 2 show, percentage data and

Table 1. Raw Frequencies and Percentages of Dream Events, Types and Categories (N= 5,761 Dream Events)—3,519 Nights from 8/13/1992 Until 8/13/2002 Excluding 133 Nights

	Raw Frequencies	Percentages
Regular (Neutral, unmemorable) Dreams	3,339	58%
Vivid Dreams	839	15%
Extra Vivid Dreams	33	5.7%
Negative Content Dreams	421	7%
Sexual Content Dreams	306	5.3%
Flying Dreams	134	2.3%
Spontaneously Occurring Lucid Dreams	81	1.4%
Induced Lucid Dreams	19	
Controlled Lucid Dreams	45	
Isolated Sleep Paralysis	228	4%
Out-of-the-body-experiences (OBEs)	4	

Table 2. Percentages of Dream Events, Types and Categories of Selected Time Epochs

Epochs, Totals, Summations	RD	V	XV	N(-)	SX	LD	ISP	FLY
8/13/1992-8/13/1995	57	21	-	10	6	1.5	2.6	1.2
8/13/1992-8/13/1999	58	17	3.2	7.5	5.6	1.6	4	1.6
First 5 Years	58.5	19	1.2	8.5	5.8	1.4	3.8	1.4
Last 5 Years	58	11	9.5	6.4	4.9	1.4	4.1	3.1
ALL 10 Years	58	15	5.7	7	5.3	1.4	3.9	2.3

raw frequencies of various categories and types of dream experiences are compared in order to assess whether stable percentages and frequencies for these categories can be observed across the span of the ten-year study. There is, for example, great stability in the percentage of regular dreams, 58%, to the rest of the category percentages and sample. More importantly, there are also frequency regularities for lucid (1.5, 1.6, 1.4, and 1.4%), sexual (6, 5.6, 5.8, and 4.9 %), or vivid and extra vivid dreams combined (21, 20.2, 20.2, and 20.5%). The occurrence of the incidence of vivid dreams combined or of lucid dreams is remarkably consistent no matter what time epochs are selected within the ten-year study (four epochs are shown on Table 2). Also, V, XV, N(-), and sexual dreams could be grouped as potential types, into a different meta category (they all share the experiential quality of being 'vivid' or of being intensely more psychologically engaging than regular dreams) with a consistent and reliable

percentage/frequency of about 27%. Finally, compare these shorter-term epochs and their relations to the grand totals in percentages, adding once again both types of vivid dreams (in the "All ten-yr" line, or 20.7). These differential set of results for the categories selected suggest variations of dream experiences that are independent. Another way to judge the degree to which these categories are unique was to conduct a post-hoc correlation analyses looking at the relationship between regular dreams and the rest of the categories or at planned comparisons between targeted categories.

Table 3 shows these correlations. These correlations being of such a small magnitude, it is hard to do a fair between-categories comparison. However, the fact that these correlations are small with respect to the frequencies of regular dreams suggests that they are independent of each other. Table 4 shows a follow-up exploration of possible inter-category relationships with interesting results. The

Table 3. Partial Correlation Matrix Showing Interrelations Among Regular Dreams and Other Dream Events, Types and Categories

	1
1 Regular Dreams	
2 Vivid Dreams	.01
3 Extra Vivid Dreams	-.16
4 Negative Emotion N(-)	.02
5 Sexual Dreams	.15
6 Lucid Dreams	.007
7 Isolated Sleep Paralysis	-.15
8 Flying Dreams	-.07

strongest correlation of the case study sample is between LDs and flying dreams, .81, confirming reports that these two experiences co-occur in subjects who routinely experience LDs (18). A not so surprising correlation in this table is that between SP and flying dreams. These two events seem to be mutually exclusive in this subject (flying being the antithesis of paralysis). Furthermore, a correlation between SPs and LDs proved to be strong, once again confirming reports elsewhere that these two events are co-occurring. To the extent that the subject utilizes SPS as a way to induce LDs then, it may not be a surprising finding. Finally, and confirming the independence of these categories, the correlations between SP and vivid or extra vivid dreams is almost non-existent. That is, the SP event is overwhelmingly an atonic event with other

significant disturbances that lead to a misinterpretation of what might be 'real' (FOPs, hypnagogic phenomena, and OBEs) whereas the vivid dream or even extra vividness in dreams are easily recognized as such. More simply yet, self-awareness is absent from the vivid dream imagery, but strongly felt during SPs and LDs.

Questionnaires, Surveys, and Narratives

Table 6 compares the raw frequencies of subjects' responses. Recall that the surveys act as our control group. First, the questionnaires and the surveys can be compared since they are asking the same questions of two distinct groups of subjects. The former is self-reported for SP, the latter is the control. Notice the small but significantly larger proportion of subjects who reported working through the night in the SP self-report. This number is greater in this group even though it is a smaller sample. FOPs are only reported in the SP self-report. Furthermore, the survey, control group was summarized on Table 5. Earlier reports (3, 20) claimed that a relationship might exist between working an all-night shift (a 'graveyard' shift) and an increased incidence of SPs. Table 6 illustrates this relationship to the extent that nine counts of admitting working an all-night shift occurred in the smaller questionnaire data,

Table 4. Selected (Planned) Correlations Showing Interrelations Among Some Dream Events, Types and Categories

	1	2	3	4	5	6	7
1 Isolated Sleep Paralysis	.31	-.06	-.01	-.29			
2 Lucid Dreams				.81			
3 Vivid Dreams							
4 Extra Vivid Dreams					-.12	-.10	
5 Flying Dreams							
6 Negative Emotion N(-)							
7 Sexual Dreams							

Table 5. Survey Data: Percentages of Subjects Reporting SPs, LDs, Neither (N= 92)

SPs Only	SPs(with LDs)	LDs Only	Neither SPs NorLDs
7 (7.6%)	15 (16.3%)	46 (50%)	24 (26%)

Table 6. Questionnaires (n= 44), Surveys (n= 92), and Narratives (n= 50): Environmental, Sleep Disorder, and Miscellaneous Data

Data Source	Narc	Inso.	Apnea	Grv.Sft.	FOPs	OBEs	ISP	HyHa	LD
Questionnaires	0	1	0	9	3	-	44	-	-
Surveys	0	3*	0	1	-	-	22	-	61
Narratives	0	-	-	-	11	5	50	19	14

(N= 186: 144 Females; 37 Males; and 5 gave no sex information-narratives)

[Narc., Narcolepsy; Inso., Insomnia; Apnea; Grv.Sft., Works a graveyard shift (8PM until 8AM); FOPs, Feeling of Presence (may include incubi accounts); OBEs, Out-of-the-body-experiences; ISP, Isolated Sleep Paralysis; HyHa., Hypnagogic Hallucinations; LD, Lucid Dream.]

* All three were females

but only one was reported in the larger control, survey group. In other words, these nine reports constitute 20% of the questionnaire sample but only 1% of the survey group. This suggests that this trend, if replicated in other studies, is an example of an occupational hazard that may trigger SPs in already sensitive individuals. Going back to Table 5 again, it is interesting to note that depending on how one classifies the SP experience (with or without the incidence of LDs), different demographics and numbers emerge with estimates, albeit from a very small sample, showing the prevalence of the SP experience as 7.6 % (without reports of LDs), 16.3 % (with reports of LDs) or their addition to 23.9 % of this sample. The literature has reported this range depending on the size of the sample, or from what population/country the sample was taken (20-23). In this sample, it is either 7.6 % or 23.9 % depending on what one is looking for and the questions one is asking. Sleep paralysis researchers should consider this range an authentic distribution with some variance allowed for sampling effects. Comparing the narrative data on Table 6 to Table 5 it is also interesting to note the percentage of individuals who report both SPs and LDs. That is, 28% of the subjects who wrote these narratives, as compared to only 16.3 % in the surveys, report both SPs and LDs. Again, these differences are to be expected given the fact that both the questionnaire and the narrative groups are self-reporting SPs routinely and that SPs and LDs co-occur (18). Furthermore, the narrative data yielded greater frequencies when self-

reporting FOPs, OBEs, and hypnagogic phenomena. This was strictly an artifact and testing phenomena since these categories were not included as questions in the other two groups. They remain a curiosity to be compared later with other reports and yields. Finally, in all three samples, there was almost a total absence of other sleep disorders such as insomnia, narcolepsy and sleep apnea. Nevertheless, a handful of SP sufferers complained of frequently waking up throughout their sleep cycle. This very activity can increase the overall frequency of cortical beta activity being punctuated with very dynamic sleep events, stages and cycles resulting in an increased probability for SP to occur.

DISCUSSION

The consistencies found in tables 1 and 2 suggest either that the dream reports are recorded using distinct and clear-cut categories with a certain degree of discipline and attention, simply an artifact of data gathering methods, or more significantly that these dream experiences and categories occur naturally and are truly distinct in the dream life of this particular subject. However, and generally speaking, this stability echoes a clear distinction between the quality and the differential dream content found in the literature between these various dream experiences. For example, few scientists or casual observers will ever confuse a SP with a sexual dream or a flying dream with a SP episode. If so, phenomenologically or physiologically speaking (compared to even

sleep laboratory data), these categories are arguably distinct and the frequencies presented on tables 1 and 2 are, in these respects, naturally occurring phenomena and cycles, and in this subject, truly represent his dreaming world and condition. Tables 3 and 4 assist in this process of elucidation to the extent that the general as well as the specific correlations and comparisons suggest an independence where there should be one, and intimacy of variables that ought to co-exist because dreamers say they do. Obviously, this case study, albeit long-term and comprehensive, needs to be compared to larger populations of chronic sufferers of Isolated Sleep Paralysis and to routine experiencers of lucid dreaming in order to establish larger population normalizations. This was attempted here by introducing data from three independent and varied sources with an added input of 186 subjects. Assuming that the comparisons between the individual case study and group data are authentic (e.g., the correlational work), then representativeness and normality, of the different categories and corresponding percentages, could be used to assess whether these categories are of higher or lower numbers in other dreamers' reports, and to judge, if one argues for the impact of daily experience to be represented in dream content as well, psychogenically, whether these deviations correspond to different developmental stages, profound psychological/biological disturbances, and/or temporary preoccupations.

At least at the very beginning, attempts were made to record dream content according to established recording criteria (24). However, since the focus of the study was on the phenomena of Isolated Sleep Paralysis and Lucid Dreaming, and the relationship between them with respect to other geophysical parameters (1,2), new categories of phenomenological events needed to be described and recorded, and only a very small percentage of "interesting dreams" were so classified. This was particularly the case when it came to inducing and preserving lucid dreams

while using SPS, or during the control of lucid dreaming while employing meditational or self-hypnosis techniques. Regarding these, the literature and recommendations of Stephen LaBerge (9) were more appropriate and useful. With greater control of the dream world via SPS or cuing, the strange phenomenology of the controlled dreamscape (including the experiential hyper-reality of otherworldly encounters, visitations and practical information sharing) necessitates classifications that now only exist in the dysfunctional medical literature or in fringe-type literature outside scientific psychiatry or psychology. These experiences await further classification and study. Nevertheless, the present study was a serious attempt to investigate further, longitudinally, via naturalistic methodology, dream content, category, frequency and type, while focusing on SP events, in natural surroundings without the artificiality or the impositions of sleep laboratory settings. While doing so, then, these findings, if proven not to be too idiosyncratic, can be utilized to gauge other frequencies of these dream experiences found in similar studies. Or, other studies can shed light on the validity of this report.

The longitudinal data will be analyzed further. For example, lag analysis can be used to establish-given a chosen timeline of days, weeks, months or years-causal relationships between one dream event and another. This type of statistical analysis could yield the causal links now missing, for example, whether SPs are causal to LDs, or LDs are causal to flying dreams, or even whether sexual dreams are causal to flying dreams (or vice versa). The case study data set also contains information about illness (flu, cold, allergies), recurrent dreams (only four in the entire ten-year period), hypnagogic hallucinations, a second longitudinal data set belonging to the daughter of the author who also suffers from occasional ISP, and diverse phenomenological reports. These other investigations will proceed even though the longitudinal study has ended.

To end on a clinical note, the psychiatrist or psychologist treating a chronic ISP case ought to at least consider guiding the most willing and able patients into the three techniques described earlier (SPS, pre-dormital self-hypnosis or other-mediated-hypnosis, and meditation-concentration techniques) with the confidence that, if successful, their patients will gain in confidence and self-esteem. Semiotically speaking SPS is a dual sign since it can potentially convey two disparate signals: 'anxiety

and fear' or 'it is now time to float about and enjoy a remarkable otherworldly dreamscape'. Additionally, and more importantly from the experiential perspective of this author, the creative possibilities that await these subjects is more than a simple consolation for having being born with a predisposition for bound lucidity. It is, verily, the freedom and control to explore a noetic space to which few individuals have a natural access. As a chronic sufferer of ISP, I choose to 'float about and enjoy' the ride.

REFERENCES

1. Conesa J. Relationship between isolated sleep paralysis and geomagnetic influences: a case study. *Perceptual and Motor Skills* 1995;80:1263-1273.
2. Conesa J. Isolated sleep paralysis, vivid dreams and geomagnetic influences: II. *Perceptual and Motor Skills* 1997;85:579-584.
3. Conesa J. Geomagnetic, cross-cultural and occupational faces of sleep paralysis: an ecological perspective. *Sleep and Hypnosis* 2000;2:105:111.
4. Hall C, Van de Castle R. *Studies of dreams reported in the laboratory and at home. Institute of Dream Research monograph series no.1.* California: Big Trees Press, 1966.
5. Hall C. Representation of the laboratory setting in dreams. *Journal of Nervous and Mental Disease* 1967;144:198:206.
6. Domhoff B. Home dreams versus laboratory dreams. In: *Dream psychology and the new biology of dreaming*, ed. M. Kramer. Springfield, Ill: Charles Thomas, 1969.
7. Cohen DB. Toward a theory of dream recall. *Psychological Bulletin* 1974;81:138:154.
8. LaBerge S, Levitan L. Validity established of DreamLight cues for eliciting lucid dreaming. *Dreaming* 1995;5:198:206.
9. LaBerge S. Lucid dreaming as a learnable skill: a case study. *Perceptual and Motor Skills* 1980;51:1039:1042.
10. McKellar P. Introspective acuity and retrieval: filtering back losses from the dreamlife. *Journal of Mental Imagery* 1992;16:167:174.
11. Wolpin M, Marston A, Randolph C, Clothier A. Individual difference correlates of reported lucid dreaming frequency and control. *Journal of Mental Imagery* 1992;16:231:236.
12. Ness RC. "The Old Hag" phenomenon as sleep paralysis: a bicultural interpretation. *Culture* 1978;2:15:39.
13. Firestone K. The "old Hag": sleep paralysis in Newfoundland. *The Journal of Psychoanalytic Anthropology* 1985;8:47:66.
14. Hufford DJ. *The terror that comes in the night: an experience-centered study of the supernatural assaults traditions.* Philadelphia: University of Pennsylvania Press, 1982.
15. Schneck JM. Sleep paralysis, psychodynamics. *Psychiatric Quarterly* 1948;22:462:464.
16. Takeuchi T, Miyasita Y, Sasaki Y, Inugami M, Fukuda K. Isolated sleep paralysis elicited by sleep interruption. *American Sleep Disorders Association and Sleep Research Society* 1992;15:217:225.
17. Takeuchi T, Miyasita Y, Inugami M, Sasaki Y, Fukuda K. Laboratory-documented hallucination during sleep-onset REM period in a noemal subject. *Perceptual and Motor Skills* 1993;78:217:225.
18. Gillis L. *The Lucid Dream Exchange (Personal Communication.)*
19. Austin JH. *Zen and the brain: toward an understanding of meditation and consciousness.* Cambridge, MA: MIT Press, 1999.
20. Ohaeri JU, Adelekan ME, Odejide AO, Ikuesa BA. The pattern of isolated sleep paralysis among Nigerian nursing students. *Journal of the National medical Association* 1992;84:67:70.
21. Goode GB. Sleep Paralysis. *Archives of neurology* 1962;6:228-234.
22. Everett HC. Sleep Paralysis in medical students. *J Nerv Ment Dis* 1963;3:283:287.
23. Ohayon MM, Zulley J, Guilleminault C, Smirne S. Prevalence and pathologic associations of sleep paralysis in the general population. *Neurology* 1999;52:1194:1200.
24. Hall C, Van de Castle R. *The content analysis of dreams.* New York: Appleton-Century-Croft, 1966.