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ESSAY

The SOREM-Led Induction Method (SLIM): A Novel and Theoretically Grounded Approach to Eliciting Out-Of-Body Experiences

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HIGHLIGHTS

A new method seems to reliably produce out-of-body experiences (OBEs), which are normally very difficult to elicit and particularly in sleep labs.

ABSTRACT

In parapsychological literature, out-of-body experiences (OBEs) appear closely correlated to the phenomenon of sleep paralysis (SP), with some authors referring to the SP state as a “gate” or “launching pad” for OBEs. Given the notorious difficulty of eliciting OBEs voluntarily using conventional methods, this paper proposes a novel methodology for eliciting OBEs, involving the induction of SP as a precursor condition. The relationship between sleep onset rapid eye movement (SOREM) sleep, SP, and OBEs are discussed, as is the work of earlier researchers who first elicited SOREM and sleep paralysis in the sleep laboratory. The results of preliminary testing of this methodology are briefly described.

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INTRODUCTION

The phenomenon of the out-of-body experience (OBE) is one of the most intriguing areas of parapsychology and the study of anomalous experience. The notion that a consciousness can seemingly exist independently of a body directly raises a number of questions of a metaphysical nature while simultaneously flying in the face of everything we seemingly know about contemporary science. Despite this, reports of OBEs are ubiquitous in parapsychological literature and appear to exist in virtually all cultures and regions in a “strikingly uniform” manner (Shiels, 1978). The phenomenon engenders a number of philosophical questions regarding the nature of the world and the self (Metzinger, 2005). More solid research and data are desperately needed in this area before we can begin to understand the etiology and nature of ecsomatic experiences.

Therein lies the stumbling block. OBEs remain one of the most problematic branches of parapsychological research—and this is particularly true in clinical studies. OBEs are notoriously unreliable and unpredictable.

When they occur, they often seem to occur spontaneously, almost at random. Some individuals appear prone to multiple OBEs, while the majority of the population will never experience a single OBE (Alvarado, 1986). A handful of individuals—"natural projectors"—claim to be able to induce OBEs voluntarily, however, when placed in the unusual environment of the sleep lab, results are typically disappointing (cf. Tart, 1998). Consequently, scientific research and associated data regarding OBEs "is missing due to the fact that they occur so rarely" (Sellers, 2018).

What is required for this area of research to move forward in parallel to other areas of scientific investigation would be a methodology or protocol which would assist subjects in eliciting OBEs in a more reliable, predictable manner. Such a methodology, in fact, would be the "Holy Grail" of OBE research and would be of tremendous value in related research fields such as NDEs, alternate states of consciousness, as well as parapsychology generally. The purpose of this article is to highlight the research which has been conducted in this area already and present a few (albeit broad) brush strokes to indicate such a potential methodology.

Sleep Paralysis and Hypnic OBEs

One of the most intriguing factors of the OBE phenomenon is its association with another subject matter of psychology, one far better researched and more deeply understood than OBEs—*sleep paralysis*. Sleep paralysis (SP) involves the experience of REM atonia whilst conscious and aware of one's environment; it typically occurs during sleep onset or offset (Hishikawa, 1976).

Sleep paralysis has been strongly correlated with out-of-body experiences since the earliest literature on the subject (Blackmore, 1999; Buzzi & Cirignotta 2000; Cheyne et al., 1999). One of the most fascinating aspects of early reports of OBEs—from a perspective of sleep psychology—is that their authors very clearly describe sleep paralysis, despite the fact that SP was neither a well-known nor clinically understood entity at the time of their reports. Dr. C. E. Simons (Simons, 1894), Caroline Larsen (Larsen, 1927), Sylvan Muldoon (Muldoon & Carrington, 1929), Oliver Fox (Fox, 1939) and others all appear to describe sleep paralysis well before it was widely known as a clinical diagnosis. Although reports of what is today known as sleep paralysis can be found going back centuries, SP was only recognized as diagnosis by the American Academy of Sleep Medicine Diagnostic Classification of Sleep and Arousal Disorder as recently as 1979.

The following account, appearing to describe SP in association with OBE-onset, was first published in 1929:

> I seemed to know that I was reclining upon a bed but still bewildered as to my exact location. I tried to move, to determine my whereabouts, only to find that I was powerless—as if I adhered to that on which I rested. *Adhered*—that is the exact sensation. If conscious at the beginning of exteriorization, one feels fairly glued down, stuck fast, in an immovable position. A peculiar fact about this phenomenon is that one can be conscious, yet unable to move.... No sooner had the sense of hearing come into being than that of sight followed. When able to see, I was more than astonished! No words could possibly explain my wonderment. I was floating! I was floating in the very air, rigidly horizontal, a few feet above the bed. (Muldoon & Carrington, 1929, p. 6)

The apparent initial presence of SP—now an established fact of sleep science—in such early OBE literature would also seem to point to some level of authenticity in these reports, given that the nature of SP as an entity was not widely known to the general public of the time.

The relationship between sleep paralysis and OBEs has been a subject of great perplexity since the earliest days of psychic research. In a previous paper, I presented the hypothesis that—far from being just loosely connected to OBEs—sleep paralysis is a *necessary condition* for the type of OBEs experienced by the individuals referenced above (Hollier, 2022).

It may be argued that SP cannot be a "necessary" condition, as not all OBE reports include the presence of sleep paralysis as a prodrome, or precursor. This is true. However, it might be the case that SP is still a necessary condition for a specific *subcategory* of OBEs; many varied forms of experience are grouped under the general heading "OBE," and there is no reason to believe that they all operate under identical mechanisms (Sellers, 2018). The sense of disassociation an individual might experience while under extreme physical or mental stress is very different from a lucid dream, wherein the dreamer sees their physical body; likewise, a vestibular-motor illusion promoted by virtual reality technology is highly distinct from the formless, mystical type of intoxication induced by some psychedelic compounds. Despite their obvious differences in nature, all of these experiences have been labeled "OBEs".

In contrast, sleep paralysis tends to appear in OBE reports where awareness is likened to normal (or even *supernormal*) waking consciousness, and where full autoscopy takes place—the subject can seemingly move about and perceive their environment despite being "outside" of the body. This type of OBE might be considered the classic "astral projection"-type OBE, found so commonly in the early literature (Crookall, 1960). These OBEs are also almost exclusively predormital (occurring prior to sleep) or postorbital (occurring after a period of sleep), and for this reason, they might be called *hypnic* OBEs, for want of a better term. It is this subcategory of OBE for which I hypothesized that SP is a necessary condition.

Sleep Paralysis as a "Launching Pad" for Voluntary OBEs

Sleep paralysis is associated with numerous negative associations in modern culture; for example, a sense of sinister presences, dark figures, etc. In reality, SP appears to be a more complex phenomenon than its largely negative reputation allows for. Far from being exclusively distressing, current research indicates that pleasant episodes of sleep paralysis are "a fairly common experience" (Kliková et al., 2021). Further studies indicate that whether sleep paralysis is a negative or positive experience appears to depend upon the subject's attitude; with qualities such as curiosity, sensitivity, and a willingness to explore predicting positive experiences (Denis & Poerio, 2017).

Sleep paralysis also seems to function as a "gate" (Hufford, 2005) of sorts for quite profound OB experiences. In perusing the (now extensive) "how to" literature available regarding OBEs, virtually all authors—older through to contemporary—stress the utility and value of SP as a precursor to an out-of-body experience; many highlight specific techniques for leveraging an SP episode into an OBE (for example, Conesa-Sevilla 2004; Fox, 1939; Monroe, 1971; Muldoon & Carrington, 1929; Newport, 2009; Raduga, 2011). Emphasis is placed on the role of sleep paralysis as a "reliable launching pad to an OBE" (Hurd, 2010).

Psychological analysis seems to agree, indicating that SP experiences generally comprise three fundamental categories; the first two being imagined intruder or incubus-type experiences, with the third type involving illusory movement experiences, as well as OBEs (Cheyne & Girard, 2009). These OBEs occurring via sleep paralysis are common, with one study finding over 20% of SP experiencers reporting associated OBEs (Blackmore, 1999); they can be "perceived as episodes with more positive emotions, such as happiness, love, peace, tranquility, hope, euphoria, and curiosity" (Herrero et al., 2023) in comparison to other SP experiences. Whereas negative SP experiences are predicted by factors such as traumatic history (Abrams et al., 2008), OBEs generally manifest in subjects with a more positive mindset, specifically "openness to experience" (Denis & Poerio, 2017). Terrillon states:

> If no attempt is made to move, that is, if the fear is overcome or if it is mild, another complex of phenomena sets in: what seems to be a "phantom body" slowly slips away from the physical body. There seems to be a dissociation from the immobile physical body, and consciousness is perceived to reside within the phantom body. At that point, the immediate surroundings of the room may be "seen," sometimes vividly, by the phantom body, and a sensation of rising and/or floating, sometimes rolling, is experienced. (Terrillon, 1993, p. 99)

This quote leads us neatly to the methodological thrust of this piece. If sleep paralysis really acts as a powerful "gateway" or "launching pad" to out-of-body experiences, then if we are seeking to more reliably induce OBEs, why not directly apply techniques which elicit *sleep paralysis*—and then leverage that state directly into an OBE?

Conventional OBE Induction Techniques

If the hypothesis that SP is a necessary condition for hypnic OBEs is correct, it would follow that conventional techniques to induce such OBEs—such as visualization, suggestion, dream-based techniques, binaural beats, etc.—are all misguided and would remain impotent in the absence of sleep paralysis (Hollier, 2022). There is no evidence that SP can be induced by conventional methods intended to elicit OBEs, and this may go a long way to explaining why the traditional corpus of OBE-induction techniques—despite their long history and apparent popularity—have such a shockingly low "hit rate" in producing actual OBEs in normal sleepers.

A more logical route—in fact, the *only* logical route—towards eliciting OBEs would be to *first* induce sleep paralysis; the resulting SP state could then be leveraged by the subject directly into a full-blown OBE using traditional techniques.

A handful of methods exist to induce OBEs by eliciting SP. The oldest and most popular of these is probably mind-awake, body-asleep (MABA), which has a provenance going back to at least the 1920s (Fox, 1939). There are several variations on the basic MABA method, which essentially involves lying perfectly still during either sleep onset or offset in the hope of eliciting SP. Unfortunately, MABA has a vanishingly low rate of effectiveness in normal sleepers because it was developed—like all conventional OBE techniques—in the absence of a solid theoretical comprehension of SP (Hollier, 2022). For a better understanding of SP, we need to turn to the science of sleep psychology.

Sleep Paralysis and SOREM

We now appreciate, broadly, the mechanisms behind sleep paralysis. SP is a consequence of minimum-latency sleep onset rapid eye movement (SOREM) sleep (Hishikawa & Kaneko, 1965). Sleep is biphasic, consisting of rapid eye movement (REM) sleep, and non-rapid eye movement (NREM) sleep (Colten et al., 2006). REM sleep is associated with higher levels of awareness in the form of dreaming, and may play a role in memory transfer (Purves et al., 2001). During REM sleep, the brain puts the muscles into a state of atonia, or paralysis, so that we do not "act out" our dreams while asleep (Peever et al., 2014). In contrast, NREM sleep is associated with a non-awareness condition; its different stages promote memory consolidation as well as the regrowth and repair of muscle, bone and the immune system (Patel et al., 2022). We typically enter sleep via NREM, and 75% of sleep is spent in NREM (Patel et al., 2022). Thereafter, REM and NREM cycle rhythmically through the night, over a period of roughly 90-110 minutes; the first REM period is brief, but time in REM increases into the distal part of the night (Patel et al., 2022).

Whereas humans can survive and function normally without REM sleep—patients taking certain antidepressants such as MAO inhibitors can have little to no REM sleep for significant periods—NREM is essential for normal functioning and survival (Purves et al., 2001). This may be why NREM is prioritized by the organism, and why we almost exclusively enter sleep via NREM; since a full night of sleep is never guaranteed, it makes evolutionary sense to fulfill our most pressing need, the need for NREM, earliest in any given sleep period. There are rare occasions, however, where this usual course of events is reversed, and individuals enter sleep via REM instead of NREM. This is called sleep onset REM (SOREM) sleep, and it generally occurs due to disordered sleep schedules (Miyasita et al., 1989) or neurological conditions such as narcolepsy (Amira et al., 1985). When we fall asleep, the NREM condition normally "turns off" our awareness and we lose consciousness; however, if REM latency—the time it takes for a subject to enter REM after falling asleep—is non-existent or very brief (at most, approximately two minutes), then the subject *retains* conscious awareness, while experiencing the REM state, including atonia: the result is sleep paralysis (Hishikawa & Kaneko, 1965). Thus, "minimum-latency" SOREM is the ultimate cause of sleep paralysis. If REM begins much later into sleep, then conscious awareness is downgraded by the sleep process, and the subject either falls into hypnagogic hallucinations or a regular dream state (Hishikawa & Kaneko, 1965). SP can also occur during sleep offset; REM sleep can perseverate when we awaken, not just when we fall asleep (Hishikawa & Kaneko, 1965). The process is simply reversed.

Despite the clear association between REM and SP, it is a mistake to label SP experiences as merely "dreams"; REM dream content is typically different from SP imagery (Mayer & Fuhrmann, 2021). It is also a mistake to assume that episodes of SP are exclusively randomly occurring events; not only is it theoretically possible to induce SOREM sleep and SP in normal subjects, but it has been done many times in the sleep lab. Rigorous Japanese studies have demonstrated that SOREM sleep and SP can be reliably elicited, even in normal sleepers. Akio Miyasita and colleagues were the first to deliberately elicit SOREM; they achieved this by applying sleep interruption techniques, or SIT (Miyasita et al., 1989). When carried out correctly, the SIT protocol disrupts the normal architecture of sleep cycles, and essentially "tricks" the organism into entering sleep via SOREM as opposed to the usual NREM. SOREM and SP exist along a spectrum of REM latency; the only major difference between one and the other is that SOREM is generally defined as REM occurring anywhere up to fifteen minutes into sleep (Reiter et al., 2015), whereas SP requires minimum latency (<120 seconds) to occur. Therefore, the same SIT protocols which elicit general SOREM, when efficient enough, will also induce sleep paralysis (Takeuchi et al., 1992).

Since Miyasita's team's trials, the mechanisms of using multi-phasic sleep-wake patterns to induce SOREM and sleep paralysis have become better understood, the research has been replicated, and the protocols have improved upon (Takeuchi et al., 2002). Modern approaches can be considered remarkably reliable in eliciting SOREM; although SOREM is normally a rare occurrence, being seen in less than 1.0% of general sleep clinic samples (Cairns & Bogan, 2015), more highly evolved protocols have proven capable of eliciting SOREM in up to 87.5% of interrupted nights (Sasaki et al., 2000). It is the author's belief, based on his own practical research, that—given the correct application of the multi-phasic sleep-wake protocol—SOREM and SP can be elicited at rates nearing 100%.

SLIM: SOREM-Led Induction Method

Using this research as a theoretical basis, the author has developed a methodology to induce OBEs which can be called the SOREM-led induction method (SLIM). SLIM comprises three areas: "set and setting"; SP induction protocol; and OBE "disassociation" techniques (see Table 1).

Unfortunately for enthusiastic amateurs, due to the nature of SP induction, it is impossible to perform SLIM alone—a sleep lab with at least one trained operator is required (in the absence of specialized equipment that could perform both polysomnography and the role of the operator). However, for any researchers with the requisite resources looking to explore SLIM, a few notes on each leg of the SLIM tripod may be of utility (See Table 1).

SP Induction Protocol/Ultradian Dynamics

The SP induction protocol is the most crucial aspect of the methodology—for it to be optimally effective, it must be carried out via an algorithm based on a mathematical model of ultradian dynamics. For this reason, it might be of utility to touch upon this model briefly.

The dynamic of ultradian cycles—the alternating rhythm of NREM and REM sleep phases—has previously been explained by oscillator models, wherein NREM and REM drives display an excitatory-inhibitory action which can be described by a set of Lotka-Volterra equations (McCarley & Hobson, 1975). (Lotka-Volterra equations are often used in biomathematics to describe the dynamics of competition, such as predator and prey populations.) These equations have since been resolved into a limit cycle mathematical model (Massaquoi & McCarley, 1992).

A simplified (but incomplete) non-mathematical analogy for ultradian dynamics would involve visualizing NREM and REM as distinct drives—or "pressures"—competing cyclically for space within the same sleep window. Because the need (pressure) for NREM is greater than for REM at the end of our waking day, when we initially fall asleep, we enter sleep via NREM; once NREM pressure drops below a critical level, it is "overpowered" by REM, which in turn starts to deplete in pressure. This battle of nocturnal pressures continues, as the organism swings back and forth between states, in a pendulum-like fashion. This pendulum, however, is asymmetrical; for example, NREM is favored earlier in the night, REM increases later on. Some models account for this by assuming that the "pressure" is not simply reduced linearly, but also ebbs and flows, wave-like, from NREM, REM, or both (cf. Le Bon, 2013).

SP induction is performed by monitoring a subject during sleep, via polysomnography; following the completion of a sleep cycle plus a 40-minute portion of the new NREM phase, the subject is awoken for

Table 1. The 3 Fundamental Aspects of SLIM

1.	**"Set and Setting"**
a.	The education of a subject in the positive aspects of SP. Subjects are taught what to expect in the SP condition, and how to relate to it. A safe and comfortable environment for the protocol is established.
b.	Subsequently, subjects are instructed in classical techniques for transforming SP into an OBE.
2.	**SP Induction Protocol**
	An algorithmic procedure based on a mathematic model of ultradian dynamics is followed to induce a state of sleep paralysis in the subject.
3.	**OBE "Disassociation" Techniques**
	Once SP is established, the subject applies the techniques acquired in the "set and setting" instruction work to pass through the SP stage, and achieve/sustain/terminate an OBE.

approximately sixty minutes. Upon returning to sleep, the subject's propensity for REM will be very high—with the NREM phase window having "passed" as they were awake—while their competing pressure for NREM will be correspondingly low, having already been depleted to some degree in the earlier cycle/s and phase portion. Consequently, when the individual returns to sleep, they are far more inclined to enter sleep via REM. Whether this occurs seems in part due to individual differences; some subjects may have a lower predisposition for entering sleep via REM for various reasons. The selection of which sleep cycle to interrupt is also a key factor; the interruption of later cycles proportionately increases likelihood of SOREM due to decreased NREM pressure, however some subjects will find returning to sleep more difficult after being awakened later in the night. With some "fine tuning" of the variables involved, minimal latency can invariably be achieved in a motivated subject through the correct application of a multi-phasic wake-sleep algorithm based on the mathematical model referenced above.

This model explains why conventional OBE induction techniques are ineffective; minimum latency SOREM is a prerequisite condition of hypnic OBEs, however any sleep-onset OBE induction techniques will be met with failure because normal sleepers enter sleep via NREM. Even methods which include nocturnal awakenings are mathematically highly unlikely to result in the "sweet spot" of minimum latency SOREM, unless they hit the mark by chance. Incidentally, this model also explains why SP is more often experienced by individuals with neurological disorders, sleep disorders or altered sleep schedules, as opposed to normal sleepers (Ohayon et al., 1999); it's because SOREM is more likely to occur when a normal sleep schedule—which naturally relieves NREM pressure as a priority—becomes disrupted or less efficient. It may similarly explain the traditional belief that unhealthy individuals or poor sleepers tend to be "natural projectors," more likely to experience an OBE (cf. Muldoon & Carrington, 1929, chapter II), because these individuals are subsequently more prone to SOREM and SP states.

OBE Disassociation Techniques

OBE techniques are drawn from the large body of practical "how to" OBE literature. This literature has a provenance going back at least a century and given its ubiquitous nature and easy availability we can afford to be brief here. Once SP is established by the subject via simple self-testing (for example, the inability to raise a hand), subjects can then perform "disassociation," from the body, by rolling over, rising up, spinning out, etc. Types of sensory experiences (vibrations, auditory experiences, etc.) are cataloged, and the subject instructed in how to deal with them. Techniques of locomotion during OBEs are discussed, as are methods of sustaining OBEs and "returning to the body". (For those desiring further reading, the work of Muldoon & Carrington, Monroe, and Conesa-Sevilla is particularly useful.)

Brief Precis of Pilot Studies

SLIM is not just an abstract theory—the author has already conducted unpublished preliminary research, albeit with a small sample of subjects (four individuals over 57 total test nights). Research until this point has seemed to confirm the findings of the Japanese studies, i.e., that SOREM and SP can be reliably induced in normal sleepers; and that, with the application of a multi-phasic sleep-wake algorithm derived from the mathematical model of ultradian dynamics, SP can be elicited in slightly over 80% of experimental nights. Where SP was elicited, over 50% of these episodes (24 nights out of 46) resulted in self-reported out-of-body experiences of varying orders in subjects who were trained in the requisite "disassociation" techniques.

CONCLUSION

OBEs—specifically, OBEs of the hypnic subcategory—are not the random or spontaneous phenomenon sometimes suggested by previous authors. Rather, they are a SOREM-based category of experience, related to hypnagogic experiences, or sleep paralysis—of which they are a sub-syndrome. Through the induction of SOREM and SP using scientific protocols, it is possible to elicit OBEs consistently and reliably.

IMPLICATIONS AND APPLICATIONS

It is the author's conviction that through the intelligent application of SLIM, a new phase of research into OBEs can be inaugurated, where OBEs can be reliably elicited in the sleep lab.

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