

## NIGHTMARES FROM THE ID.

**James Allan Cheyne**

“Monsters, John! Monsters from the id.”

Last words of Lt. “Doc” Ostrow

In the 1956 science fiction film, *Forbidden Planet* a mysterious and incomprehensibly powerful entity has all but exterminated a human colony on the planet Altaira. The mystery is ultimately solved by Lt. Ostrow with the help a brain boost from the “educator,” a device of the long defunct race of the Krell, the original inhabitants of the planet. Ostrow’s dying revelation is initially not very enlightening for his comrade, Commander John Adams, as the term “id” does not appear to have much currency at the end of the 21<sup>st</sup> Century. Adams is forced to turn to the scholarly Morbius to ask: “What is the id?” Morbius answers, somewhat agitatedly: “Id - id - id. It’s . . . it’s an obsolete term. I’m afraid once used to describe the elementary basis of the subconscious mind.” The id in question, in the end, turns out to be that of Morbius’s own unconscious, which is attempting to prevent anyone from leaving the planet. In true psychoanalytic tradition, the Id of Morbius is the repository of instinctive selfish, lustful, and violent urges (Well, selfish and violent anyway; 1950’s Hollywood was not yet ready for unsublimated lust), which, with the aid of Krell technology, wreaks havoc on all who dare attempt to leave the planet.

### THE ID BRAIN

The notion and the name (Latin “id” = English “it” = German “Es”) are most closely associated with the name of Sigmund Freud. Freud, however, quite explicitly and with acknowledgement, took the term from Georg Groddeck’s “Das Buch vom Es.” Even before Groddeck, Nietzsche had used the term to refer to the most basic level of human nature along the lines of Schopenhauer’s notion of the *will*. Recently, however, we have acquired a fairly detailed understanding of the neural location of something very like the Nietzschean Id, one without the quirky psychoanalytic baggage.

What I propose as a neurological Id has its center deep within the temporal lobes of the brain. Its nucleus is a small structure called the amygdala though it includes a number of associated brain structures. We might think of these structures, collectively, as constituting the core of an “ID brain.” Interestingly, this modern version of the id turns out to be, metaphorically speaking, at least as terrified as it is terrifying and more threatened than threatening. This is likely a reflection of the fact that our early ancestors were as likely to have been prey as predators –and, as predators, their own favorite prey.

Neuroimaging studies have shown that the amygdala is particularly responsive to signs of threat. These are processed unconsciously by the ID brain well before they enter consciousness. This is possible because the amygdala receives sensory inputs independent of, and more directly than, cortical centres. The amygdala transmits and receives information throughout the brain affecting many cortical sensory systems. Thus, it is not surprising that the amygdala is implicated in many emotional disorders, including depression, phobias, and posttraumatic stress disorder

The amygdala does not seem, however, to be the immediate source of fearful *feelings*. The structures responsible for the feeling of fear involve later processing of information. Growing evidence suggests that the most immediate and direct function of the amygdala is to prepare cortical centres to *attend to* and *analyze* emergency situations, via a threat-activate vigilance system (TAVS). The TAVS reacts even when such cues are presented so faintly or briefly as not to register in consciousness. The ID brain itself does not have the analytic power for fine-grained analysis of sensory input. Detailed perceptual analysis is achieved by recruiting the vastly more powerful, if somewhat more

sluggish, cortex. This recruitment is achieved by infecting the cortex with the id's own paranoid bias, directing the brain to consciously interpret as threatening what might normally be taken as innocuous. Once the TAVS is activated, the cortex becomes more likely to scrutinize subsequent threat cues or anything resembling them. In a sense, the entire brain becomes temporarily paranoid under the influence of the amygdala.

The utility of having a suspicious, paranoid ID brain, specialized to detect signs of danger, working below consciousness makes very good functional sense in a variety of critical circumstances. In the absence of signs of danger, the ID brain is quiescent and the majority of the brain's resources are free to be deployed on life's many quotidian concerns. Whereas chronic paranoia is wasteful of energy and damaging to our social relationships, temporary paranoia in truly threatening circumstances is obviously functional. What if, however, the id suddenly and spontaneously spread its paranoia independently of any external threat?

In the absence of such brain boosts and wireless connections to enormous sources of power enabled by Krell technology, our ID brains can directly terrorize only ourselves in our dreams, something they can, however, do quite effectively.

## **NIGHTMARES FROM THE ID**

I sleep—for a while—two or three hours—then a dream—no—a nightmare seizes me in its grip, I know full well that I am lying down and that I am asleep . . . I sense it and I know it . . . and I am also aware that somebody is coming up to me, looking at me, running his fingers over me, climbing onto my bed, kneeling on my chest, taking me by the throat and squeezing . . . squeezing . . . with all its might, trying to strangle me.

I struggle, but I am tied down by that dreadful feeling of helplessness that paralyzes us in our dreams. I want to cry out—but I can't. I want to move—I can't do it. I try, making terrible, strenuous efforts, gasping for breath, to turn on my side, to throw off this creature who is crushing me and choking me—but I can't!

Then, suddenly, I wake up, panic-stricken, covered in sweat. I light a candle. I am alone. - Guy de Maupassant, *Le Horla*, 1887

The forgoing account vividly captures the horror of a distinctive kind of nightmare. Maupassant describes his protagonist's experience with a literary eloquence and with an authenticity of personal experience. It is clear from early medical writing that the term "nightmare" referred not simply to bad dreams, but specifically to the experience described by Maupassant. Over the course of the 20<sup>th</sup> century, the term "nightmare" became commonly and vaguely applied to bad dreams generally. Discussions of the highly specific experiences of the original referent of the term virtually disappeared from the scientific and scholarly literature as well as from the public sphere in most industrialized societies.

## **SLEEP PARALYSIS EXPERIENCES**

In 1876, contemporaneous with Maupassant's writing, an American Civil War surgeon, Silas Weir Mitchell reported a curious malady, which he called "night palsy," during which soldiers reported a temporary but terrifying nocturnal paralysis. The phenomenon was subsequently reported in the medical literature under a number of different labels. By 1928 Samuel Wilson coined the term "sleep paralysis" (hereafter "SP"). SP is now understood to be a dissociated version of the paralysis accompanying rapid-eye-movement (REM) sleep during which our most vivid dreams occur. This paralysis appears to have the function of preventing us from the consequences of acting out our dreams in our sleep. In 1967, a psychiatrist, Sim Liddon, suggested that SP with hallucinations appeared to be what had earlier been described as the "nightmare". Liddon also drew parallels between SP experiences and worldwide accounts in traditional cultures of demonic night-spirit attacks during sleep. In the 1970s and 1980s, anthropological and folkloric studies of David Hufford, Robert Ness, and others noted specific similarities between the nocturnal "old hag" attacks of Newfoundland, as well as numerous accounts of "spirit" and "ghost" attacks

from around the world, and the emerging medical and psychological literature on sleep. Later, a number of surveys established SP experiences to also be common, if seldom reported, in industrialized societies. By the 1980's SP had become a leading scientific explanation for the then popular accounts of alien abductions. In the 1990s, physiological studies in Japan by Kazuhiko Fukuda, Tomoka Takeuchi, and their colleagues had corroborated the presence of REM states during SP and its associated experiences.

Although by the 1990s some general surveys of prevalence of some aspects of SP had been conducted, few systematic quantitative analysis had been undertaken. Thus, beginning in 1996, some graduate students and I began a series of extensive surveys, with detailed probes concerning sensory, motor, and affective experiences during SP. I was soon struck with how well the organization of such experiences mapped onto patterns of intrinsic REM neural activity. Moreover, although people do report elaborate narrative scenarios such as described by de Maupassant, much more common are fragmented sensations with no obvious narrative organization. Most people report only 1-3 specific sensations in an episode or none at all. In many cases, paralysis may be accompanied by only a few odd sounds, buzzing, humming, or whispering voices, or a strong feeling of something present in the room, almost invariably accompanied by extreme fear.

A listing of a few of the more common sensations associated with SP episodes is provided in Table 1 along with proportions of people reporting each sensation. As the list reveals, a variety of sensations and feelings are reported. The varied and seemingly haphazard sensations is consistent with the quasi-random bursts of activation from the brainstem coursing up to the cortex during particularly active (phasic) REM states. A major function of the cortex is to integrate sensory input and to synthesize a coherent scene. This brain does effectively every waking minute. The synthesizing challenge for is, however, much greater during REM than during waking when input is pre-organized by the structure of the external world whereas activity originating in the brainstem during REM provides little or no pre-organization to scaffold the brain's sense-making efforts.

Hence, our dreams are typically bizarre, disjointed, and incoherent. They are also highly emotional, consistent with neuroimaging studies reporting unusually high activity levels of the ID brain during REM states. Our most emotional dreams are nightmares especially during SP episodes. When we attempted to assess the level of fear experienced during SP, people often told us that the term "fear" was simply inadequate to describe their feelings – nothing in their waking lives or conventional bad dreams approached the terror associated with SP experiences. During SP, the ID brain rules.

## **THE STRUCTURE OF THE SLEEP PARALYSIS EXPERIENCES**

Our analysis revealed thematic organization of SP experiences consistent with the hypothesis that the ID brain guides the cortex in its efforts to make sense of the rather chaotic neural input during SP. Even when not experienced as full blown nightmares of demonic assault as described by Maupassant, we found, using techniques such as structural equation modeling and path analysis, that the reported SP experiences reveal underlying structural patterning, very much biased to threat and assault scenarios. The majority of SP experiences fall into three major groups we labeled as: Intruder, Incubus, and Vestibular-Motor experiences. The three-factor structure has been found repeatedly in several large samples across a variety of demographic variables. In Table 1, the different experience types are organized according to their membership in the different groupings.

*Intruder* experiences involve a *feeling of a presence* in the room as well as visual, auditory, and tactile sensations. People typically describe a feeling of being watched by a presence with malevolent intentions. The accompanying visual experiences vary from vague shadows to caped figures to ugly trolls. Auditory experiences range from buzzing and whirring through slamming doors and approaching footsteps to sinister whispering and demonic gibberish. There is a diffuse and often elusive quality to these sensory experiences that is quite consistent with the diffuse and haphazard nature of the electrochemical bombardment of the cortex during phasic REM.

*Incubus* experiences include feelings of suffocation or choking, pressure on the chest, pain, and explicit thoughts of death. As for Intruder experiences these sensations may also occur as isolated feelings or as elaborate and violent assault scenarios in which the victim is physically and sometimes sexually assaulted

(the latter including painful sensations of anal or vaginal penetration). Intruder and Incubus factors are typically moderately correlated with one another and with intense fear. Intruder and Incubus can co-occur and, when sufficiently elaborated, are jointly interpreted as threat followed by assault by an unknown assailant. Vestibular-motor experiences are usually much less terrifying, though they are sometime incorporated into incubus assault experiences. When accompanied by erotic sensations, the assaults become rape scenarios.

## **THE PARANOIA OF THE ID BRAIN**

Recent theoretical interpretations of Intruder and Incubus experiences propose that SP is produced by defective coordination of linked neural sleep-wake and REM on-off mechanisms associated with structural and chemical anomalies in the brain. This discoordination may allow REM to intrude into the waking state. Moreover, being consciousness while paralyzed, helpless, and in the dark likely elevates fear even beyond its normal high level of activity during REM. Because the TAVS is internally and spontaneously activated, there is no objective threat and, given the absence of external sensory input during SP, no possible objective resolution of the source of the feelings of threat. Uncertainty of unresolved threat is itself extremely aversive and its reduction highly motivated. Interpretation of the spontaneous cortical activation of the TAVS during REM will be negatively biased just as interpretation of environmental events is biased under actual threat conditions. Sensory imagery associated with REM will therefore often assume sinister and frightening forms consistent with the sense of threat. Given that most basic motivational states have their own distinctive subjective experience or feeling state, we have argued that persistent activation of the TAVS during SP is most often experienced as the unseen threatening agents so commonly observed in reports of SP experiences.

## **NO NEED FOR OCCULT EXPLANATIONS**

In summary, it is a reasonable claim that a basic understanding of sources of the terror of the SP experiences and their associated imagery has been achieved by considering the circumstances of SP. During SP, the individual is awake, in a vulnerable supine position, and paralyzed. It can readily be seen that a positive feedback system between these conditions and the already internally REM-activated ID brain will quickly generate extremely high levels of fear. In addition, an important causal factor in Incubus experiences is the REM-related motor paralysis experienced as a sense of restraint, and the resulting difficulty controlling breathing as suffocation. Reduced blood oxygen, and constriction of airways also contribute to feelings of suffocation. Such physiological effects are unsurprisingly associated with the conviction that one is about to die. In addition, the inability to breathe voluntarily during SP can be interpreted as pressure and restraint caused by something sitting on the chest. The specific nature of the threatening and assaulting agents vary somewhat across cultures, but they are generally characterized as being of hideous and frightening aspect, and given that they evaporate instantly upon recovery from the paralysis, will seem to have been mysterious and insubstantial spirits. The brain must draw upon cultural images to make more concrete the suggestive feelings of threat in the form of terrifying spirits shaped by generations of stories and discussions of nightmare imagery.

I do not claim that the foregoing explanation will be the last word in understanding these experiences. I look forward to future research that will refine, expand, and correct explanations and hypotheses offered here. I offer the account in response to claims sometimes made that there is currently no compelling scientific explanation for such experiences. I leave for the reader to judge how compelling these may seem. Nonetheless, I am unaware of any nonscientific explanation of any depth or anywhere close to the likelihood of being at least partially correct.

In our everyday experience, a basic distinction we make is between our experiences of the external world and those of our inner world of feelings, memories, and thoughts. Yet, as experience, what seems outside and what seems inside are ultimately *in* experience. The brain has been described as an “emulator” of our experience of reality, both external and internal. On this view, there is no fundamental difference between

waking experience and dreaming (or hallucinating) experience, except that waking experience is modulated, or shaped, by the senses, which transduce physical energies (e.g. electromagnetic and pressure waves) into neural impulses. It is now well known that the senses are capable of sampling only a very limited amount of information online – far too little to be the sole basis the apparently rich images of the external world we experience. Usually the emulator does a reasonable job of constructing our experience of the external world constrained by the limited information provided by the senses because it is scaffolded by our senses. The richness of our waking experiences comes from being online. As I look out my window now I see a cedar on my periphery is shaking vigorously. At least it seems that way. Actually “it” is just a quivering grey-black mass on the edge of my visual field; but when I turn to my left, sure enough, my initial interpretation is corroborated. At any given moment we see much less than we experience visually or, stated perhaps somewhat more positively, we experience much more than we see at any given moment, but that experience is supported by the fact that when I triangulate my sources of information my interpretation is corroborated. Well, almost every time. Though the senses are usually reliable there are situations in which they fail us. When the senses lead us false or misleading conclusions we speak of illusions. Other times it is the emulator that fails us, and then we speak of hallucinations. Both illusions and hallucinations are relatively rare but not so rare as is generally thought and neither are necessarily symptoms of psychopathology.

People often argue that their hallucinations cannot be hallucinations because they seem so real and may be offended by the suggestion that they may be mistaken. Yet, illusions and hallucinations, *as experiences*, can and, given the foregoing analysis, *should* seem to be as authentic as any veridical experience. Conversely, it is possible for quite veridical experiences to seem strangely false as in cases of “derealization” in which all experience loses its sense of authenticity. Thus, it is possible to be honestly deluded about both the reality of hallucinations and the inauthenticity of veridical experience.

Under special circumstances, ingestion of certain drugs, during dreams, delirium, psychosis, sensory deprivation, and conditions such as SP, brain states are generated in the absence of normal sensory input. To the extent that these events emulate the same brain states as conventional experiences our experiences will feel the same. Under these assumptions, it is indeed possible for SP experiences to feel so real. Whether these assumptions are correct or convincing, it does make the case that the unreal can sometimes be indistinguishable from the real. Indeed, SP experiences should feel especially convincing, vivid, and real, given that it is part of the function of the TAVS to compel us to take such interpretations especially seriously.

It is not surprising, given the nature of the experiences and the intense emotions aroused, that many SP experiences attract people with more occult interests and reinforce them in such beliefs. Interestingly, many who hold that these experiences reveal a spirit world beyond the ken of science, argue that the consistent and specific themes of hypnagogic nightmares and their cross-cultural universality argue against naturalistic and physiological explanations. Ironically, as I hope is obvious from the foregoing, both the very nature of the SP experiences and their cross-cultural universality are well explained by universal physiology along with the physical context of the experiences.

#### **FURTHER READING:**

Adler S. (2011). *Sleep paralysis: Night-mares, nocebos, and the mind-body connection*. New Brunswick, NJ: Rutgers University Press.

Cheyne, J. A. (2010). Recurrent isolated sleep paralysis. In M. J. Thorpy & G. Plazzi (Eds.), *Parasomnias and other movement-related sleep disorders*. Amsterdam, Elsevier.

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**TABLE 1**

Percentages of People Reporting Different Sleep Paralysis Experiences

Common Experience Types	Percentages during:	
	Lifetime <sup>1</sup>	Single Episode <sup>2</sup>
<b>INTRUDER (THREAT)</b>		
Felt presence	71	58
Visual	63	43
Auditory	63	45
Touch	47	30
Movement of Bed Covers	17	13
<b>INCUBUS (ASSAULT)</b>		
Death Thoughts	64	37
Pressure	62	53
Breathing	60	47
Choking/Suffocating	21	30
Pain	29	22
<b>VESTIBULAR-MOTOR</b>		
Movement	52	24
Floating	44	21
Out-of-Body Experiences	43	22
Falling	38	8
Flying	24	4
Autoscopy	23	13
<b>EMOTIONS</b>		
Fear	95	85
Bliss	13	12

**Published in:**[https://www.researchgate.net/publication/308628961\\_Nightmares\\_from\\_the\\_id](https://www.researchgate.net/publication/308628961_Nightmares_from_the_id)

*Volver a Bibliografía Georg Groddeck*  
*Volver a Newsletter-13-ALSF*

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