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The Ominous Numinous

Sensed Presence and 'Other' Hallucinations

A 'sensed presence' often accompanies hypnagogic and hypnopompic hallucinations associated with sleep paralysis. Qualitative descriptions of the sensed presence during sleep paralysis are consistent with the experience of a monitoring, stalking predator. It is argued that the sensed presence during sleep paralysis arises because of REM-related endogenous activation of a hypervigilant and biased attentive state, the normal function of which is to resolve ambiguities inherent in biologically relevant threat cues. Given the lack of disambiguating environmental cues, however, the feeling of presence persists as a protracted experience that is both numinous and ominous. This experience, in turn, shapes the elaboration and integration of the concurrent hallucinations that often take on supernatural and daemonic qualities. The sense of presence considered here is an 'other' that is radically different from, and hence more than a mere projection of, the self. Such a numinous sense of otherness may constitute a primordial core consciousness of the animate and sentient in the world around us.

It is as if there were in the human consciousness a sense of reality, a feeling of objective presence, a perception of what we may call 'something there', more deep and more general than any of the more special and particular 'senses' (James, 1958, p. 61).

Virtually everyone has had, at some time, the experience of feeling that he or she was not alone, despite otherwise confident knowledge that there really was no other person nearby. This feeling may range from a vague almost embarrassingly unwarranted suspicion to a feeling of absolute certainty. We commonly associate such feelings with darkness, strange surroundings and, of course, being isolated from our fellows (James, 1958; Suedfeld, 1987; Zusne and Jones, 1982). We may experience such a sensed presence when walking alone on a dark street, or through a wood lot, or even at home alone, especially if it is a 'dark and stormy night' filled with vague rustlings, howling winds and distant animal sounds. Specific locales may become, through tradition, well-known sites for such experiences (Reed, 1988; Suedfeld, 1987; Suedfeld and Mocellin, 1987).

The sensed presence consists of a feeling of raw otherness present-at-hand, its only quale an ineffable sense of 'thereness'. Guy de Maupassant, in a short story in which

an ineffable and frightening presence plays a central role, coined an intriguing name for the presence, the 'Horla'. There has been considerable speculation about the manner in which Maupassant came up with that particular name (e.g. Cogy, 1970). Perhaps the most obvious is simply that it is *le hors-là* — the outside-there — a sort of everted and perverse *Dasein* of utter otherness. There is, throughout Maupassant's account of the *Horla*, a strong element of dreadful foreboding, underscoring the threatening and alien nature of the presence. One knows, often with a dreadful certainty that transcends mere evidential support, that something is out there, sentient and, in particular, aware of us. Indeed, this presence seems expressly to have come to find us, for it now watches us — often with a malevolent aura of evil.

In recent work quantitative analyses have provided evidence that the sensed presence is a common concomitant of sleep paralysis that is particularly associated with visual, auditory and tactile hallucinations, as well as intense fear (Cheyne, Rueffer and Newby-Clark 1999). Sleep paralysis itself is a conscious state of involuntary immobility occurring prior to falling asleep or immediately upon waking. An episode may last from a few seconds to several minutes. Although individuals in this state are unable to make gross bodily movements, they are able to open their eyes and to perceive and subsequently report on external events (Hishikawa, 1976; Hishikawa and Shimizu, 1995). Recent surveys suggest that approximately 30% of young adults report some experience of sleep paralysis (Cheyne, Newby-Clark and Rueffer, 1999; Fukuda *et al.*, 1998; Spanos *et al.*, 1995). Out of combinations of particular sensory experiences grow elaborate and complex scenarios that have been identified as experiential sources of accounts of incubus attacks, daemonic possession, old hag attacks and, more recently, alien abductions (Baker, 1990; 1992; Cheyne, Rueffer and Newby-Clark, 1999; Firestone, 1985; Hufford, 1982; Ness, 1978; Spanos *et al.*, 1993). These experiences are typically quite frightening and are the original referents for the term 'nightmare' (Liddon, 1967; Hufford, 1982).

Sleep paralysis experiences are referred to as hypnagogic (sleep-onset) or hypnopompic (sleep-offset) *hallucinations*. The term hallucination is appropriate because the experiences occur while one is awake and aware of the immediate surroundings. These hallucinations are also, however, a form of dreaming inasmuch as they are associated with sleep-onset REM states (Hishikawa and Shimizu, 1995). Sleep paralysis hallucinations are, in effect, the superpositioning of dream imagery and affect on waking consciousness. Indeed, the various experiential features of these hallucinations are readily mapped onto known neurophysiology of REM (Cheyne, Rueffer and Newby-Clark, 1999). Of particular relevance to the present argument are recent neuroimaging studies of REM-related activation of subcortical and cortical *limbic* centres including the extended amygdala, nucleus basalis of Meynert in the substantia innominata, and anterior cingulate cortex (see Hobson *et al.*, 1998 for a review of this work). As Hobson *et al.* note, these studies reveal 'an unexpectedly prominent role of the limbic system in the selection and elaboration of dream plots' (*ibid.*, p. R1).

The sensed presence during sleep paralysis is often experienced as ominous or threatening. This is quite consistent with the involvement of the limbic structures associated with REM. Whalen (1998) suggests that there is a 'vigilance system' associated with the extended amygdala and related structures such as the nucleus basalis of Meynert. The vigilance system is normally activated by an initial detection of

possible danger. The vigilance system initiates procedures that monitor the environment for further cues to corroborate or disconfirm the existence of an emergency. In a similar vein, but with specific reference to consciousness, Ellis (1999) speaks of these processes as *motivated* interpretive activities and further notes that sensory processing remains unconscious until affective midbrain and cortical structures such as the anterior cingulate highlight particular features of the sensorium. The specific nature of those features is specified by biases, or perhaps more accurately, *interests* induced by the vigilance system. Evolution has selected certain environmental features as cues that warn us of things in the immediate environment that constitute a potential threat to the organism. These cues are, individually, inherently ambiguous in the absence of further corroborating evidence. Indeed, Whalen suggests that the function of the vigilance system is the disambiguation of prior warning cues. The immediate task under such conditions is to ‘flesh-out’ what is merely implied by biologically prepared cues. The resultant state of vigilance entails lowered and biased sensory thresholds for further threat cues and may set the stage for false alarms. These temporary biases are adaptive because the initial cues for danger change the a priori probabilities of immediate danger (LeDoux, 1994; 1996). The chain of events (threat cue — ambiguity — search — disambiguation) is normally accomplished quite rapidly. That is, environmental cues ordinarily quickly corroborate or disconfirm the existence of threat.

Cheyne, Rueffer and Newby-Clark (1999) argue that feelings of presence such as emerge during sleep paralysis arise from the same limbic neurophysiology underlying threat detection. I suggest further that the sensed presence represents the experiential component of the resulting ambiguity. During sleep paralysis endogenous REM-based activation of the vigilance system produces, in the absence of external threat, an irresolvable ambiguity. This radical ambiguity is experienced as a protracted threatening, though insubstantial, sense of presence. The sensed presence, on this view, constitutes a liminal *feeling* on the edge of what Damasio (1999) has called core consciousness. It is important to note that, although external cues are absent, there is a concurrent quasi-random endogenous activation of affective, sensory and motor areas. These normally constitute the source of REM dream-imagery (Hobson and McCarley, 1977). During sleep-onset REM, the sensed presence may serve to bind and shape concurrent visual and auditory hallucinations according to the adaptive biases of the vigilance system. James (1958) explicitly treated feelings of a presence as ‘imperfectly developed’ hallucinations (p. 62). I argue further that the sensed presence may be viewed not only as the most elementary form of hallucination but also as a neuropsychological context that motivates, initiates and shapes more elaborate hallucinoid experiences. On this view, the affective qualities of the sensed presence are critical in determining the nature of the associated hallucinations.

A critical claim of the argument of this paper is that the inherent ambiguity of the threat detection mechanism is, under the conditions just described, experienced as at least one aspect of what has been referred to as the *numinous* (Otto, 1923). Otto coined the term ‘numinous’ (*numen praesens*) to designate the ineffable sense of a sacred or daemonic presence. It is, for Otto, critical to a full understanding of the nature of the ‘Holy’. Although there are clearly positive beatific aspects to the numinous, Otto frequently stresses the ‘awfulness’ and the ‘dreadful’ aspects of the numinous experience. These aspects are captured in the term ‘mysterium

tremendum', the mystery before which we shudder and tremble. Otto speaks of the *mysterium tremendum* as 'overpowering', 'dreadful', 'grisly' and 'horrible'. Otto took 'daemonic dread' to be that 'religious moment which would appear to have been in every case the first to be aroused in the human mind' (Otto, 1923, p. 132). Moreover, the experience of the numinous is one of 'terror fraught with an inward shuddering such as not even the most menacing and overpowering created thing can instill' (*ibid.*, p. 14). As may be inferred from the preceding quotation Otto clearly regarded such experiences as genuinely transcendent and supernatural. The present argument, however, is that the ineffable experience of the numinous may be given a straightforward naturalistic interpretation, one that provides an evolutionary basis for at least the more terrifying and daemonic aspects of religious experience. Otto, of course, would not have been satisfied to see his argument reduced to a naturalistic one. The sensed presence is, on the view offered here, the numinous in its purest form. Moreover, the subsequent hallucinations arising from the quasi-random REM-related imagery provide, at best, only a partial and incoherent resolution of the ambiguity and hence retain some of the numinous qualities of the sensed presence throughout the episode.

The Experiential Structure of Hypnagogic and Hypnopompic Hallucinations

The qualitative accounts that follow were provided by respondents to the Waterloo Unusual Sleep Experiences Survey. This instrument includes a number of items assessing features of sleep paralysis and associated hallucinoid experiences (see Table 1). The items are based on a taxonomy that has been developed through a

	Source: Psychology Undergraduates (N = 771)	WWW Survey I (N = 1120)	WWW Survey II (N = 811)	WWW Survey III (N = 857)	WWW Survey IV (N = 2690)
HHEs:					
Intruder					
Presence	.57	.74	.67	.63	.78
Visual	.47	.50	.64	.62	.57
Sounds	.58	.61	.65	.64	.61
Touch	– ¹	–	–	.50	.51
Fear	.78	.97	.96	.96	.95
Incubus					
Pressure	.63	.66	.70	.70	.63
Breathing	–	.58	.60	.63	.59
Choking	.34	–	.21	.21	.21
Pain	.51	.31	.32	.34	.27
Death Thoughts	.49	.66	.65	.64	.64
¹ Not assessed					

Table 1 Hypnagogic and Hypnopompic Hallucinations: Proportion of cases reporting each type of hallucination during sleep paralysis

combination of quantitative and qualitative analyses of the cumulative written records provided by respondents. Each item in the survey calls for a frequency and an intensity response and provides ample space after each item for a written description of the experience in the respondents' own words.

The groupings of hallucinoid experiences in Table 1 correspond to three factors extracted in quantitative analyses utilizing exploratory and confirmatory factor analysis (Cheyne, Rueffer and Newby-Clark, 1999). The first factor (Intruder) consists of sensed presence and fear, as well as visual, auditory and tactile hallucinations. This factor has been named 'Intruder' because the experiences are consistent with, and often interpreted as, the presence of an intruder in (usually) one's bedroom. The second factor (Incubus) consists of pressure (most frequently on the chest), breathing difficulties (including feelings of suffocation and choking), pain and thoughts of death. This factor was named 'Incubus' after the traditional account of a creature that sits on the chest of a tormented sleeper. The components of this factor are consistent with, and often interpreted as, physical assault. A third factor (Illusory Movement Experiences) consists of sensations of floating, flying, falling, out-of-body experiences and other sensations of movement. This factor is somewhat less related to the other two factors and hence is not systematically considered here. Numerous quantitative analyses have provided evidence of a replicable, stable and coherent factor structure. These previous analyses fail, however, to convey a qualitative sense of the phenomenology of the experiences.

The present qualitative analysis is based on approximately 7,000 pages of text provided by respondents. The organization of the discussion of the qualitative analysis in the present paper follows closely the factor structure discussed above and outlined in Table 1. In some cases, the sample accounts provided in the text have been subject to minor editing of spelling and grammar. These textual materials have been collected over a period of four years from two sources. The survey was administered to 2,715 introductory psychology students over four consecutive academic terms, yielding 771 sleep paralysis cases (502 females, 269 males) with a mean age of 19.13 (SD = 6.12). In addition, a series of electronic versions have been placed on the World Wide Web from August 1997 to the present (Cheyne, 1997–2001), yielding 7,478 responses (4,943 females, 2,565 males) with a mean age of 29.67 (SD = 10.56). The sex ratio of women to men, of approximately 2:1, is consistent with several broad surveys of hallucinoid experiences in the general population (Bentall, 2000).

Feelings of presence

Mere presence: 'There is always a presence sensed during sleep paralysis and sometimes you don't see the presence but you know it's there.' In less than a quarter of the cases, the presence is described as a neutral, or slightly apprehensive, impression of something externally present but with no corroborating sensory experiences. 'One "feels" something, never seeing it.' 'I've never seen it but there is definitely something there.' The presence is sometimes explicitly described as being just out of sight, behind one's back or just off to one side. 'There was a black object on the corner of my bed, but I couldn't move my head to see it, I could only view it from the corner of my eye.' The conviction seems to be that if only one could turn around 'it' would prove to be quite visible. There is clearly a conviction that the entity is external and that its

existence is independent of the experient (i.e. this is unquestionably the way things *seem* to the experient).

Although sometimes the presence is sensed as just being there, people will sometimes report that they sense its movement or approach; ‘coming up the stairs’, ‘entering the room’, ‘approaching the bed’ and ‘climbing up on the bed’. Feeling the mattress being pressed down as the presence climbs on is commonly reported.

In almost half the cases, the presence is watching or monitoring the subject. It is ‘as if someone that I couldn’t see was there, watching.’ Respondents are frequently puzzled that they are unable to specify how they know this. ‘You feel that someone is looking at you and you don’t know where they specifically are.’ Aside from being very disconcerting, this indefiniteness must contribute to the otherworldliness of the presence. In slightly stronger terms, other respondents describe the presence as ‘staring’, rather than merely ‘watching’.

A threatening and evil presence: One of the stronger and more consistent associations is between the sensed presence and fear. Most respondents appear to have an immediate intuition that the presence is someone or something dangerous. Over 60% of respondents indicated that the presence itself is perceived as threatening, often extremely so. More explicitly, the presence is commonly interpreted as possessed of a malevolent, evil intent. Many descriptions focus on a sense of impending doom provoked by this evil presence. ‘It felt like something threatening was standing beside me.’ A feeling of urgency may accompany the feelings of fear. ‘I always feel like I am in grave danger if I don’t wake myself up as soon as I can.’

A major difference between sleep paralysis hallucinations and dreams is the relatively high rate of reported fear during the former. Typically, slightly less than one-third of dream reports are accompanied by anxiety, fear or other negative emotions (Merritt *et al.*, 1994; Schredl and Doll, 1998; Strauch and Meier, 1996). In contrast, we have consistently found that between 78% and 98% of respondents report explicit fear (Table 1).

Given the prevalence of interpretations of threat and evil associated with the presence it is scarcely surprising that the predominant emotion is that of fear or rather, in the words of one respondent, ‘absolute cold terror’. Respondents are often most emphatic about the extreme nature of their fear. ‘I can’t imagine anything in reality that could cause greater fear than these episodes.’ Many respond to our query about ‘fear’ with unabashed contempt for the inadequacy of the term to describe their emotion.

Fear is not a strong enough word!

The word ‘fear’ doesn’t even come close. Panic is more like it!

There are not words strong enough to describe the horrific fear I felt.

How about ‘overwhelming terror’? These attacks leave me shuddering and crying.

These experiences of dread and terror associated with the presence may also be clearly differentiated from the fear associated with paralysis, death or suffocation (Rueffer and Cheyne, 2001). Thus, although fear may sometimes be ascribed to the possibility of physical harm, most acknowledge that there is something uncanny about the sense of terror. It is ‘more a feeling of dread, like something terrible was

about to happen'. The terror transcends mere bodily concerns. 'I literally fear for my soul.' Although the presence may sometimes be personified as death, 'I've also felt a presence but never see it. [It was] like Death was breathing down my back', more common is simply an intense feeling of indescribable evil. 'The most disturbing thing surrounding these episodes of paralysis is the intense feelings of evil surrounding me.' Supernatural and daemonic agencies are thought to be threatening to rob the sleeper of her soul or, alternatively, to enter her body.

I also feel a presence in my mind (like something sinister or evil) that is trying to draw me into an extremely deep, permanent sleep. I feel that if I succumb, I will never wake up.

It wants to take my soul or mind or remove me from my body.

The presence was of a demonic nature, purest evil, out to possess my soul . . . The presence was ALWAYS evil, and I could always feel it trying to enter my body . . . I find this utterly terrifying, beyond anything I can imagine experiencing in the real world because it is so contrary to 'reality', and yet feels entirely authentic . . . Not so much 'die', more like losing possession of my soul.

Occasionally the 'soul-extraction' may be quite violent. 'Something evil is trying to rip my soul out of my body.' Such descriptions of forcible soul extraction are remarkably common. The sense of evil is often made concrete by the experience of the presence as a devil, demon or other inhuman, even unnatural, creature.

Visual hallucinations

Visual hallucinations are quite variable and range from vivid and detailed imagery to something close to a pseudo-hallucination. Pseudo-hallucinations lack the substantiality of externally perceived stimuli, are known to be nonveridical, or appear in inner subjective space rather than externally (Bentall, 1990; Reed, 1988). The visual hallucinations are clearly external although they often have an 'as if' quality, as though the strong feeling of presence was verging on becoming a visual hallucination. Approximately one-third of the respondents noted that the images are quite vague and undefined. 'Once or twice I have thought I even saw something . . . human silhouettes, but the image could have been "my imagination".' As in the case of the sensed presence, the visual images are almost out of sight, on the periphery of vision or obscured by ambient shadows. 'It was a small ugly creature behind me, that I could only see from the corner of my eyes.' 'It was a dark figure, either completely black or obliterated by shadows.' The images may also be associated with implicit threats. 'Until lately, all my sleep paralysis [episodes] involved a visible black shaped "presence" in my room, meaning to do me harm.'

The following examples illustrate visual hallucinations of varying degrees of concreteness, though few of them really achieve a definite character.

Usually, there seems to be a kind of tangible shadow wrapped around my back, sides, and shoulders. Once, I saw a black triangle darting around in the air around me.

Another time, I saw two white fingerlike projections unfurl from behind me and extend over my arm.

I saw a black humanoid shadow move over the ceiling above my head, and then it seemed to glide down on top of me.

In less frightening episodes the figures may be of friends, parents or partners, and even, on occasion, household pets that might well be expected to enter the bedroom at

night. A minority of respondents report that they see fairly detailed visual images of both objects and beings. The more concrete threatening figures typically come in the form of stereotypic demons, death's heads, skeletons, ferocious phantom dogs and, not infrequently, as the 'grim reaper'.

In the past, it has always been some indistinct, evil presence — a shadowy demon, a cowed figure. The first time I experienced this, I saw a shadow of a moving figure, arms outstretched, and I was absolutely sure it was supernatural and evil.

Sometimes an otherwise benign figure may be endowed with a sense of evil. 'At first there was nobody, then one night there was this presence, a little girl I could not see but I could feel. She was an absolutely evil presence.' The fantasy images sometimes take the character of readily available cultural images. 'I can distinctly remember seeing three dark figures standing at the end of my bed — Darth Vader-like.' A Native American woman explicitly drew upon her heritage to identify an image. 'Spider woman came from the ceiling and wrapped me up and sang songs to me. I was 10 and later the deerwoman would come and stand at the foot of my bed.' (She explained that the spider woman and deer woman were well known figures from childhood stories.) Another experient made a somewhat more idiosyncratic association. 'The first shape I saw was a cloth-like triangle hanging or balanced in mid air and appeared to be a crude form with a hat. Funnily enough it reminded me of the Sandeman logo.'

Slightly more than one-third of the cases involve some sort of human or humanoid identity. Both male and female figures are typically dressed in black or, occasionally, white, and are described as having strikingly white faces, sometimes described as death's heads. Given the threatening nature of the sensed presence and the resulting visual images it is not surprising that the visual hallucinations may also be interpreted as conventional intruders. 'Actually, I awoke to see a figure of a man, all in black, standing at the foot of my bed. I tried to scream very loud, but all I could do was go "ah ah ah" very ineffectually.' There is also evidence of considerable within-person variability in the interpretation of visual hallucinations. 'I have imagined burglars, rapists, terrorists, monsters, demons, and the devil all in my room. Sometimes they just stare or laugh at me while I lie helpless and other times they try to attack me.'

Auditory hallucinations

Auditory hallucinations during sleep paralysis are extremely diverse. One quality does seem to pervade all of this diversity, however. The sounds are very distinctly experienced as being external to the hearer rather than 'in the head' (see below).

Many of the sounds are very elementary. Often the auditory experiences are described as 'buzzing', 'grinding', 'humming', 'hissing', 'ringing', 'roaring', 'rushing', 'screeching', 'squeaking', 'vibrating', 'whirring' and 'whistling' sounds. These sounds are often described as being very loud and 'mechanical'. For this first category there is little or no interpretative elaboration. Sounds are described in the most basic sensory terms. Other sorts of descriptions are very much like those for the elementary sounds except that they are identified with machines or materials that produce such sounds. Ringing telephones are reported, as are sirens, vacuum cleaners, power tools, electric motors, slamming doors and breaking glass. Difficult-to-identify music is also reported, sometimes described as being like the sound of a poorly tuned radio receiving several stations at once. Alternatively, the sounds may

be attributed, perhaps by the less technologically minded, to natural causes. One-quarter of the participants report general environmental sounds: the ‘sound of wind’ or ‘a rushing/roaring like waves in a sea shell’ and ‘sand rushing past my ears’.

The quality of the sounds may be interpretively modified only slightly when a ringing sound is attributed to a telephone, for example. Other sounds suggest more complex interpretations and narrative elaborations. ‘There was a sound rather like a cardboard box of some weight being dragged across a dusty wooden floor.’ One of the most commonly reported movement sounds is that of footsteps.

I heard footsteps in my room, walking around my bed and then back out.

I heard a door shut and footsteps coming closer. (Although the door was double locked and nobody had the key anyway.) When the footsteps entered the bedroom, I felt a presence standing over me and a warm hot tingly breath/air down my whole body.

Diverse animal sounds, described as growling, snarling, howling, screeching or barking, are commonly mentioned. Among the more human sounds, laughing and crying are mentioned. ‘Sometimes I hear laughing of an old man or an old lady. Sometimes I hear a baby crying.’ More often, the sounds are somewhat more sinister. ‘I hear moans and voices of people whispering things in my ear and often mumbling.’

Voices: Symons (1995), following Seligman and Yellen (1987), distinguishes between hallucinatory and non-hallucinatory (‘conjured’) auditory imagery. Symons argues that, in dreams, voices are seldom heard as external sounds. Rather, conversations are experienced ‘in the head’ as internal dialogue. Thus, it is the sense and meaning of conversations that are experienced in dreams, not the concrete utterances. Bergson (1958) discusses essentially the same idea. ‘Most of us at one time or another . . . have dreamed about speaking to someone or being engaged in a lengthy conversation only to have forced on us the singular realization that we are not speaking and had not spoken, and that our interlocutor had not uttered a single word. We had exchanged our thoughts and carried on an unequivocal conversation, yet we had heard nothing’ (pp. 27–8). In contrast to these observations on dream voices, sleep paralysis voices are experienced as externally produced sounds but of indefinite or nonsensical meaning. Indeed, human voices are the most common auditory hallucination associated with sleep paralysis (36% of respondents). The voices may be experienced as loud shouting or soft whispering but, in either case, the sense of what is being said is often elusive. The voices are described as ‘gibberish’, ‘garbled’ or ‘foreign-sounding’.

One time I awoke to find half snake/half human thing shouting gibberish in my ears.

An evil-sounding female voice was whispering in my ear. The words were incomprehensible, but I couldn’t say whether it was a different language or not.’

In cases in which the voices are comprehensible their messages are typically simple and direct. The voices may simply call out the sleeper’s name, but more often, they utter a threat, warning, command or a cry for help.

The first few times this happened I thought I heard someone crying for help and it was quite intense.

When I awoke to the women’s voice telling me I was going to die if I didn’t wake up.

The first time, when I was on my side, I heard heavy breathing. The second time, when I was lying on my back, I heard an evil voice saying, “I’m going to get you now, you can’t get away from me.” It kept repeating. Some of the things I couldn’t make out.

Once I heard a man's voice in my right ear say 'This is your subconscious speaking to you.'

But as I listened I could sense this 'thing' hover over my head — very close directly over my ear. It said '[Name]!' . . . The voice continued 'I've got work for you to do!'

I heard a voice telling me I was playing the game wrong and I had to play it right or quit. It was a woman's voice and she sounded as though she was in a lot of pain and very far away, then she said, 'he's coming' and left.

In one case, a respondent heard the voice of someone who had actually threatened her in the recent past. 'At first I thought — just my roomie — but I recognized the voice as a mystery caller who has harassed me twice.' We may see here an example of someone explicitly considering alternative interpretations and settling on perhaps the most plausible given the context of sensed presence, fear and a recent threatening experience.

Tactile hallucinations

Although we have only recently begun probing for tactile experiences they appear to be a common hallucinatory experience associated with the Intruder cluster. Consistent with this association, tactile experiences are typically associated with a sense of external agency in 34% of cases. Being grabbed by the hands and wrists is particularly common. In some of the examples that follow reference is sometimes also made to Incubus hallucinations (see below). 'I had the sensation of an ugly creature touching me.' 'I did feel a "male's" hands wrapped around my arms!' 'Once the presence was a dark shadowy evil figure and once a white mist, which called my name and touched my shoulder.' 'Occasionally I feel as though someone is grabbing hold of my hand or sitting on my back and or chest.' 'I once woke up to what I thought was a man leaning over me in bed who had my right arm in a tight grip, holding me down on the bed. The man just had me "pinned" by the wrist and I was frozen for what seemed like forever staring up into his face (probably lasted less than a minute).'

The Incubus

Assault scenarios are common (see Table 1) and often involve, as a central component, being held down. Assault by supernatural beings appears extensively in the folklore tradition, as part, for example, of the 'Old Hag' experience (i.e. being assaulted by an old crone — Hufford, 1982).

I tend to feel more like I am being held down than that I cannot move, even though I can't see anybody . . . No matter what position I'm in it feels as though someone is sitting on my upper body and holding my arms in place — I consciously try to fight whatever it is that's holding me.

Breathing difficulties: People frequently report breathing difficulties during sleep paralysis (see Table 1). These tend to be associated with feelings of pressure on the chest, tightness around the neck, and feelings of suffocation or smothering. Perceptions of breathing difficulty probably arise as a direct consequence of the paralysis of the voluntary muscles (Cheyne, Rueffer and Newby-Clark, 1999). The following remark is consistent with insight into this effect. 'My body breathes for itself. I have no control over set patterns.' Although automatic shallow breathing continues, when the sleeper attempts, unsuccessfully, to breathe voluntarily this may lead to panic over

possible suffocation. The feelings of suffocation may also be induced by REM-related hypoxia and hypercapnia (Douglas, 1994). This inability to ‘get one’s breath’ often leads to panicky feelings and to references to the possibility of dying from suffocation. Respondents frequently imagine that a pillow is being pressed against their faces. ‘I have felt that I was being suffocated because I had the sensation that I was lying face down on my pillow, when in reality [I] was sleeping on my side or back.’ The attacks may also be directly associated with the sensed presence.

[There was] a sensation of something in the room watching me or sometimes even smothering me.

Sometimes it begins when I fall asleep and (seem to) immediately wake up. My eyes pop open and I sense something ominous. Then something comes over me and smothers me, as if with a pillow, I fight but I can’t move. I try to scream. I wake up gasping for air.

Pressure: The difficulty breathing is sometimes experienced either along with, or perhaps as, a severe pressure on the chest. ‘I feel like I can’t breathe, and I’m being crushed.’ This pressure appears to be interpreted as pressing or pushing air out of the lungs. Although the classic incubus hallucination is of a crushing weight on the chest, the pressure may also be felt on the back or side of the torso. Sometimes the intensity is sufficiently intense that the language becomes somewhat stronger, referring to ‘crushing sensations’. Pain is also typically localized in the torso, and most often in the chest. The pressure or pushing on the body may be so intense that the person feels as though s/he is being pushed or pulled into the bed. ‘I saw a black something. I cannot explain what it was. It came into my bedroom and lay down on the bed next to me. I could feel the bed move and I felt a heavy pressure on my chest. I felt as though my body were being pushed into the bed.’ The source of the feelings of pressure are often attributed to an external agent and associated with descriptions of bodily assault. In a classic ‘Old Hag’ account one respondent described an episode in which ‘this old lady, that was sitting on top my chest beating the living daylights out my head’. The interpretation may include hallucinations of strangulation. ‘I would feel like someone was sitting on my chest, trying to choke me.’ The possibility that hallucinations might be associated with apnea during sleep paralysis is consistent with the finding of Hobson, Goldfrank and Snyder (1965) of a correlation between respiratory apnea and a dream about being choked.

Whereas the feeling of presence is often associated with a nameless terror, when associated with sensations of pressure and difficulty breathing it may be more explicitly associated with thoughts of impending death. ‘I feel a very strong force pushing down on my chest, and pulling me down towards the floor. I also feel a presence in my mind (like something sinister or evil) that is trying to draw me into an extremely deep, permanent sleep. I feel that if I succumb, I will never wake up.’ Sometimes when difficulty in breathing is associated with the presence it is interpreted as a full-blown attack by the presence.

During my first experiences I believed a ghost was sitting on my back, pressing me down!

Commonly I will wake from a dream and sense it’s thick presence. Then it will rush at me, climb on my back and pin me to the bed.

Although it wasn’t a pressure on my chest but the hallucination of ‘someone’ holding my head down with a pillow.

I thought it was some unspeakable evil trying to get hold of my throat.

I have had a woman holding me down at the shoulders and trying to suck out what I thought was my soul through my abdominal area while yelling at me in strange tongues.

Occasionally, these struggles will have a frankly sexual component, usually associated with sexual assault or rape.

I believed that the devil or an evil spirit had me pinned down and was fondling me.' 'The time that it felt like I was being raped by the devil or an evil spirit . . . strong sexual feelings were automatic along with fear.

Discussion

I have argued that, during sleep paralysis, the sensed presence is the experiential component of a threat detection mechanism that gives rise to interpretive efforts to find, identify and elaborate sources of threat. Material for these interpretive efforts is provided by REM-related sensory imagery. The nature of the resulting interpretations betrays a potential link to mechanisms underlying initial responses to threat of predation. The sensed presence is typically described as a monitoring one, akin to a predator stalking its prey. A threatening, malignant or evil intent is frequently ascribed to the presence. Respondents are often at pains to express the intensity and depth of the accompanying terror. In addition, bodily sensations of crushing and painful pressure on the chest, back, side and neck may be interpreted as a full-fledged and potentially mortal attack by the presence. These experiences mimic responses to predation, particularly those associated with tonic immobility (Ratner, 1975). Tonic immobility refers to a state of paralysis of the major motor muscles with accompanying physiological responses consistent with fear and hypervigilance and that appears to engage the same fundamental neurophysiology as sleep paralysis (Gallup and Maser, 1977). The working hypothesis underlying our research is that the sensed presence and related hallucinations arise from extreme hypervigilant defensive states occasioned by paroxysmal activation of various centres in the limbic system, notably the amygdala, periaqueductal gray, anterior cingulate, and nucleus basalis of Meynert in the substantia innominata. In such states organisms are extraordinarily alert to environmental events potentially associated with danger. These states normally engage diverse bodily responses, including motor and sympathetic activity, as well as numerous sensory and motor regions of the cortex. In the case of endogenous activation, because the sense of threat is not immediately corroborated, the fear itself has a numinous quality. Many respondents explicitly claim that the fear is quite unlike any real-world fear that they have ever known. It is likely that such experiences may also be evoked by unusual or extreme environmental conditions involving threat or danger or those mimicking such conditions: sensory deprivation, isolation of the sort explorers sometimes experience, and life-threatening conditions — including near-death experiences (Saver and Rabin, 1997; Suedfeld, 1987; Zusne and Jones, 1982).

One of the more striking features of many of the visual hallucinations of sleep paralysis is that they range from vague and indistinct impressions to quite specific images. Visual hallucinations thus appear to represent attempts of the threat detection mechanisms to flesh out the sensed presence in consciousness. The more concrete images are often of quite conventional beastly and daemonic figures of doom: devils,

demons, witches, aliens and even cinematic villains such as Darth Vader and Freddy Kruger.

The descriptions of the most basic auditory hallucinations are quite consistent with a quasi-random activation of auditory centres and may be seen as analogous to vague and indistinct visual images. It is easy to imagine how readily meaningless white-noise-like bursts may be translated into vague environmental sounds, background whispers and unintelligible gibberish. The sudden hallucinated exclamations, including threats and warnings quite directly associated with the feelings of an alien presence, are reminiscent of classic schizophrenic hallucinations. It is commonly argued that schizophrenic auditory hallucinations are largely a matter of the transformation of one's own 'thoughts' into other's 'voices' (Bentall, 2000). There are at least two dimensions to this transformation; one from wordless thought to audible voices and another from self- to other-generated words or thoughts. Woody and Bowers (1994) stress this latter dimension and speculate on its relation to frontal lobe functioning. They argue that auditory hallucinations may be of two distinct types. One form of hallucination is the loss of the sense of agency in one's inner speech. Such are likely to be described as thought control, thought insertion and the like. The sense of thinking, or of internal conversation, is maintained. Meaning is also retained, although given the general deterioration of coherence associated with other aspects of schizophrenia, that meaning may be rather fragmented and disjointed. The second form of hallucination is that of explicit audible voices (and other sometimes difficult-to-specify sounds). It is conjectured that these are either of more peripheral origin and associated with spurious activation within the inner ear, thalamus or primary sensory cortical areas or, alternatively, with nonspecific environmental ambient noises that are misinterpreted. The auditory hallucinations during sleep paralysis thus appear to share some features of schizophrenic auditory hallucinations, namely concreteness and loss of sense of self-generation.

Curiously the voice hallucinations seem more sensual than those of dreams, at least as has been claimed by Symons (1995). Symons argues that it is essential that dreams should not have too much realism because the imagery of our dreams must not be phenomenally conflated with sensory input. If this were to happen, either external auditory signs of danger would not wake us or, conversely, we would be continually wakened by our dream imagery. Symons is particularly emphatic that auditory dream imagery must be distinct from auditory input because audition is a particularly important modality for detecting danger in the dark of night. Symons' (1995) argument makes the assumption that, to use Flanagan's (1992) terms, experiential sensitivity equals informational sensitivity. Flanagan argues against the validity of such equivalence, however. Appropriately enough for the present argument, one source of evidence he provides is based on the apparent contradiction between the phenomenological vividness of dreams and their subsequent poor recall. In addition, in spite of the compelling phenomenology of hypnagogic hallucinations, people may be easily aroused from the state of sleep paralysis by external tactile and auditory input (Hishikawa, 1976). This constitutes further support for the dissociation of phenomenological and informational sensitivity. In the case of sleep paralysis at least, the phenomenological vividness of internally generated hallucinations need not interfere with the informativeness and effectiveness of external inputs.

We have only recently begun to examine tactile sensations in the context of sleep paralysis and found them to be clearly associated with the Intruder factor. Consistent with this association, the tactile sensations are almost exclusively taken to be active touching, grabbing or embracing by the hands and arms of an animate, albeit indefinite, embodiment of the presence. Such interpretations of the tactile experiences fit well with the larger narrative of threat and assault. Indeed, the tactile sensations appear to be something of a bridge between the hallucinations of threat and those of assault. Consistent with this interpretation, tactile hallucinations are more strongly correlated with the Incubus factor than are other Intruder hallucinations. Experiences of oppression and suffocation also combine with the sense of threatening presence and with auditory and visual hallucinations to contribute to the construction of elaborate hallucinations of attacking intruders. These are interpreted as painful physical and sexual assaults by devils, demons and hags. One respondent spoke of ‘wrestling with the devil, turning over and over in the air’, reminiscent of Jacob’s struggle with the stranger (Genesis, 32: 24–32). Armstrong (1993) provides an account of a mystical experience of the prophet Mohammed that will sound quite familiar at this point. Mohammed awoke from sleep one night and felt enveloped by an overwhelming divine presence. An angel appeared to him and commanded him to ‘Recite!’ (*Iqra!*). Intimidated by the implications of this command Muhammad refused. The angel, however, enveloped him in an overpowering embrace, so he felt as if all the breath were being squeezed from his body. Just as he felt he could resist no longer, the angel released him and commanded him once again to ‘Recite!’. Again Muhammad refused and again the angel embraced him until he finally relented. The Arab world of the time had many disreputable *kahins* possessed of jinni. Mohammed himself must have had qualms about becoming one of these. Ultimately the intensity of the experience appears to have won him over, however. In the account of Muhammad’s struggle the features of the waking nightmare are quite evident, including awakening to a presence, hearing a brief audible command and being held in a crushing embrace.

Non-Delusional Character of the Hallucinations

Many respondents are quite emphatic that the hallucinations are entirely compelling but are able nonetheless to maintain a critical stance. Their rationality triumphs, as it were, over the evidence of their senses. One respondent, for example, who provided a vivid and detailed account of an alien abduction experience was most emphatic that, although his experiences were utterly compelling, he considered himself a hard-headed and sensible person and did not believe any of it for a minute. His experience was one of abduction but this did not make it true, even for him. Such scepticism does not appear, on the other hand, to detract from the impact of the hallucinations. ‘[It is] like the devil had me and I don’t even believe in the devil.’ Another said, ‘if I were a religious man, I would certainly describe my experience as a contact with a god or devil’. This contrast between what is experienced and what is acceptable is often puzzling to the experient. ‘The strange thing is how VIVID the experience is. It is real even in the face of a “conscious” effort to convince myself that it is not.’ Some do, of course, accept the possibility that the presence was truly otherworldly and daemonic. A number of respondents, for example, were currently, or had been formerly, members of fundamentalist sects and, as such, readily felt a deeper spiritual meaning in

their experiences and accepted the experience as truly a struggle with Satan. 'Before I knew what sleep paralysis was (I had it probably 2–3 years before I knew what it was) and I had been raised in a religion considered a cult, which I had left years before, I would wake up unable to move, feeling like I was being held down in bed, and thought it was the demons from the church doing this to me.' In some cases this sort of interpretation was that of the experient and in some cases it was the judgment of another member, or pastor, of their church. Two respondents reported undergoing formal (and unsuccessful) exorcisms.

I suggest that there are two levels of interpretation operating in these situations. The first-level interpretations are on-line, situationally embedded, automatic, intuitive and obligate. One might describe this level of consciousness as 'the way things *seem*'. There is, however, a second level of interpretation that is more explicit, critical and verbal. This level of interpretation is an off-line or 'action-neutral' (Clark, 1997) decision about the first-level experiences and may be described in everyday terms as 'the way things "really" (or probably) are'. As the parenthetical 'probably' implies these higher-order interpretations are often circumspect and tentative. The two levels of interpretation also bear some resemblance to pervasive distinctions that have been made between narrative and paradigmatic modes of thought (Bruner, 1986), experiential and rational perspectives (Epstein, 1994) and embedded and abstract self-awareness (Gallagher and Marcel, 1999). Given the general features of the REM state, namely the activation of limbic centres discussed earlier, along with the relative deactivation of executive and association cortex such as the dorsolateral prefrontal cortex (Hobson, Stickgold and Pace-Schott, 1998), it is not surprising that the more critical stance is rather compromised at the time the hallucinations are actually experienced. In any case, rational analysis can hardly reduce our terror in such cases because the fear is as much a cause of the hallucinations as it is a consequence. That is, it is not simply that the hallucinations are terrifying; rather, the hallucinations are the way they are because we are already terrified. As Hobson and his colleagues put it, emotion may best be viewed 'as a primary shaper of [dream] plots rather than as a reaction to them' (Hobson, Stickgold and Pace-Schott, 1998, p. R2). Of course, when one is 'successful' at creating truly frightening images, thereby corroborating the sense of threat, fear will be sustained or even increased. Thus the vigilance system hypothesis clearly suggests reciprocal feedback between affect and imagery. Beyond simply enhancing or dampening the intensity of fear the hallucinoid imagery may also change the quality of the emotional experience. Terror may yield to feelings of excitement, exhilaration, enthrallment, rapture or ecstasy. A small number of respondents, while acknowledging some fear, especially during their initial episodes, come to enjoy the experience. This seems most common among individuals who practice meditation. In some cases, they even report that they are able to experience a feeling of transcendence that eluded them during mediation.

Concluding Remarks

The other enters into discussions of consciousness rather infrequently and then usually as an interlocutor: a mirror for, or a scaffold of, the self (Baldwin, 1987; Cooley, 1908; Mead, 1934). In such cases, the role and character of the other is often portrayed as a cooperative and rather benign partner, or even a benevolent helper. Even

for those, such as Heidegger, Sartre or Bakhtin, who sometimes consider otherness in less sanguine terms, the other often plays a significant and ultimately productive role in the completion or construction of the self (Cheyne and Tarulli, 1999). Even the sensed presence has been viewed as a right-hemisphere analogue of the left-hemisphere sense of self (Persinger, 1993). Considerations raised here point to a more sinister and primordial other of concern to us at the most fundamental biological roots of our being. This other is one that is radically different from the self, indeed capable of annihilating the self, and hence of instantly dominating our consciousness above all other considerations, however rarely and briefly. This other is probably more than a mere projection of, or analogue to, the self. Such an other constitutes a part of the *Umwelt*, a part that encompasses a way of understanding the animate and sentient in the world around us. Moreover, such an other opens up in a most direct and terrifying way our vulnerability, finitude and personal helplessness, supine and trembling before the carnivorous and pitiless predator.

There is indeed, Otto suggested, a daemonic aspect to the numinous. The fear of ghosts, Otto took to be but a degraded version of the daemonic experience. He appears to suggest that, as imagery becomes more specific and the experience less numinous, the religious element is somehow debased. Perhaps this is why traditional routes to purely religious and spiritual experiences have been through techniques, prayer, meditation, drugs, etc. that sustain numinosity and modulate affect. On this view holy individuals are masters of the numinous who can sustain the ineffable and simultaneously control affect so that the experience seldom degenerates into crassly specific images.

The ominous numinous brings forth not simply thoughts of death but, more essentially, a sense of foreboding. Interestingly, in spite of the overwhelmingly threatening and terrifying aspects of the sensed presence and its elaborations, thoughts of death are most strongly associated not with the sensed presence, or other intruder hallucinations, but with incubus experiences of pressure on the chest, breathing difficulties and choking sensations. These latter experiences are all signs of assault and, hence, of a more immediate possibility of physical demise. The fear and terror associated with the feeling of presence and other intruder hallucinations is not so much a fear of death but rather an unspeakable dread of an *unknown* power. Although there is, of course, more to human spirituality than dread, the terrible and most awesome aspect of the spiritual arises in its most primordial and gripping form, I suggest, in situations that mimic basic biological challenges and threats. Spirituality, on this view, has its roots not in our most cerebral intellectual functions (though it may reach its 'highest expression' through these) but in the frailty and precariousness of our bodily selves.

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