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CHAPTER 14

Reality Dreams and Their Effects on Spiritual Belief: A Revision of Animism Theory

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"I dream the world, therefore the world exists as I dream it."

— Gaston Bachelard

Historically, dreams have been credited with the power of personal transformation. Usually within the context of a spiritual tradition, these transformations reputedly arose in situations of physical and psychological healing, creative inspiration, and personal insight. Even today, it is claimed that working with dreams can facilitate change in psychotherapy [1-6] and can help solve a diversity of personal problems [7]. This continuing interest in the healing power of dreams comprises part of the larger psychological movement focused on the exploration and implementation of the healing potential of imagery (e.g., [8]). Yet it is also a rich and unique tradition in its own right. Effects on waking thought, feeling and behavior that originate uniquely in dream imagery may be referred to as *oneirogenic* effects. The focus of the present chapter is an experiential quality which sets dream imagery apart from other kinds of imagery and which may be critical in the occurrence of many oneirogenic effects. This quality is the *reality sense* of dreams. It is the general thesis of this work that the reality sense is a primary oneirogenic factor that influences waking spiritual beliefs, much as early anthropologists described dreaming in general to influence waking animistic beliefs.

At present, the empirical literature on oneirogenic effects is sparse but consistent with the notion that dreams affect waking feelings. In one study, when clients awaiting psychotherapy reported and reviewed their laboratory REM dreams for a period of time, their emotional expressiveness in later psychotherapy sessions was increased relative to that of a control group [9]. In a second study, psychophysiological measures of HR, EEG, etc. indicated that remembering dreams was more arousing than remembering other kinds of imagery [10, 11]. In a third study,

dreams were ranked quite highly as affecting daily mood [12]. However, apart from these few studies, the empirical literature is virtually silent about dream effects on human beliefs, and on spiritual beliefs in particular. Historical and clinical anecdotes constitute the bulk of what is known about such dream effects.

In the present chapter, I describe the results of a review of this literature and an analysis of these results from the point of view of a somatic theory of human experience. This venture is intended to demonstrate that 1) the reality sense is a valid, albeit nonobvious feature of dream experience, and 2) oneirogenic effects are most evident after dreams in which a heightening of this reality sense occurs.

Reality sense as used here refers to the phenomenological observation [13-15] that dreaming recreates subjective, waking impressions of reality, i.e., impressions that the self is oriented and participating in the flux of events afforded by the earthly environment. When a heightening of the reality sense occurs in a dream (i.e., a *reality dream*), these recreated impressions may become so vivid that the person feels awake and present in the dreamed environment as if it were a waking environment. Sometimes the sensations may become so extreme that the person feels that the dreamed world is even 'more real than reality.' Reality dreams of this sort occur in many common forms (e.g., nightmares, lucid dreams, paralysis dreams) and have been described in the literature as forcefully affecting waking life. Sections I and II of this chapter are descriptions of the reality sense and reality dreams, and the bodily processes hypothesized to produce them.

The historical literature suggests that the effects of reality sensations in dreams are largely spiritual in nature, i.e., they may influence how a person animates his/her personal world with powerful and unseen forces. Material reviewed in sections III, IV and V has been selected from this literature to demonstrate how vivid experiences of the reality sense in dreams are associated with beliefs in malevolent and benevolent spiritual forces.

I. THE REALITY SENSE IN WAKING AND DREAMING STATES

The Waking State Reality Sense

Dream effects described below are assumed to occur as a result of reality mimesis, i.e., the dream's capacity to simulate subjective waking reality [16]. To understand dream effects, however, requires looking beyond auditory and visual mimesis to more subtle occurrences of somato-sensory mimesis. This is warranted by the simple fact that the reality sense in general endures even though auditory and visual sensation may be absent. This is the case in congenitally deaf and blind persons and in normal persons with eyes and ears closed to the external world. It is hypothesized here that the waking state reality sense is a global sensory invariant [17] that is derived, in large part, from a combination of somatic sensations, including most fundamentally kinesthetic, cutaneous, vestibular, and

affective sensations. Reality invariance (and variance) thus derives from the same sources that give rise to awareness of body position, movement, balance, and other bodily feelings. Because the reality sense is derived from a combination of proprioceptive, interoceptive, and exteroceptive receptors, it registers bodily responses to the terrestrial environment [18, 19], rather than just attributes of the environment alone. Reality mimesis during the dream state, then, also depends upon the simulation of somato-sensory invariants [20].

This hypothesized somato-sensory substrate of waking state reality sensation is consistent with James' analysis of belief [21]. According to James, belief is the sense of the realness of an object, image or idea—a primary mental experience grounded in emotion and bodily action [21, ii, p. 295]. He suggested that the ultimate criterion for judging belief lies in the subjective world of an 'active and emotional' ego [21, ii, p. 297-298], through which the somatic senses of touch, kinesthesia, emotion, etc. ultimately validate an object's reality [21, ii, pp. 296-298, 307-311]. For James, the more an object stimulates interest, incites motor impulses, or arouses emotions such as hate, desire, fear, etc., the more believable, or real that object is to the person [21, ii, pp. 307, 311]. The somatic sources of the reality sense thus arise from a confluence of elementary events: orienting responses, motor responses, continued attending, emotional arousal, and touch, when possible. The senses of vision and audition contribute only secondarily to this process of reality sensation as 'organs of anticipatory touch' [21, ii, p. 306].

This model of the reality sense implies a process of self-reflection as well, because somatic self-awareness must be maintained for reality to endure, even though focal (visual/auditory) attention may be riveted elsewhere—on the movements of an external object, for example. A self-reflective component of the reality sense must exist which permits internal, somatic sensation to blend with perceptions of an exogenous object, just as emotion in the theory of James-Lange and others [22] is rooted in bodily receptors yet experienced as coincident with external situations. Self-reflection in this sense differs from other conceptualizations of self-reflectiveness, which are assumed to be absent during dreaming [23]. Rather, it comprises one of the most immediate forms of self-awareness, the moment-to-moment awareness of bodily presence and participation in the environment, which may well be a defining characteristic of dream experience.

The Dream State Reality Sense

Does the reality sense continue during dreaming? James' own comparisons of dreaming with waking belief and hallucination suggests that it does not [21, ii, pp. 287-291, 294]. However, James did not examine dream state phenomenology as comprehensively as he did waking state phenomenology.

Many more recent studies suggest both that dreams are experienced as real world experience and that this dreamed reality originates in somatic sensation.

Dreams Are Experienced as Real

There is consensus among many specialists of dreaming and among the results of several empirical studies that a primary feature of the dreaming state in general is its compellingly real nature. Freud discussed this reality as the hallucinatory quality of dreaming. He indicated, for example, that dreams were experienced as sensory events, like waking perceptions: '... dreams are *true* and *real mental experiences* of the same kind as arise in a waking state through the agency of the senses . . .' [24, p. 115]. He also identified several distinguishing qualities of dreaming which do not rely on visual or auditory processes for their occurrence: their dramatic quality [24, pp. 114-115], their realness of affect [24, p. 596], and their incorporation of somatic and vegetative stimuli (kinesthetic, gastric, sexual, dental) into manifest content [24, pp. 95-102]. These qualities resemble some of the somatic qualities identified by James as characteristic of waking belief and correspond to the somatic sources emphasized as basic to the reality sense by the present model.

Foulkes [25, pp. 37-45] too, found that dreams seem real to the dreamer, he characterized them as multidimensional 'credible world analogs':

... we experience our spatial localization in an imaginary environment. We feel our bodies move about in this environment. We initiate speech to other characters who also seem to exist within this environment, and they answer back. The simulation of what life is like is so nearly perfect, the real question may be, why *shouldn't* we believe that this is real? [25, p. 37]

Furthermore, Foulkes' description of dream reality parallels James' account of waking reality in concluding that visual features of the imagery are not necessary components of this reality experience [25, p. 37-38].

A recent treatment of dreaming as a 'world simulation' process [16] led to a similar conclusion about dream reality, specifically, that a dream is just as real when it is dreamed as current waking experience is real as it is lived [16, p. 156]. This is because 'reality' in the two states is a product of the same world simulation process [16, p. 155].

The reality nature of dreaming and its basis in bodily responding is perhaps most clearly articulated in a recent phenomenological analysis by Craig [15]:

... what encounters us while dreaming appears to us as tangibly, palpably present . . . we are hard pressed to find a reliable basis for saying that dreaming experience is any less real for us while dreaming than our waking experience while awake . . . we actually feel throughout our bodies and beings the ecstasy, terror, passion, rage or humor which overtakes us in response to that which appears. Sometimes, in fact, we actually wake up drenched in sweat, with tears on our cheeks, or with our heart racing wildly' [15, p. 38].

The inevitable outcome of assessing dream experiences as they are thus given phenomenologically is to become open to unacknowledged possibilities portrayed in them and to allow these to affect further waking development [15, p. 46]. This principle is in perfect accord with the notion that the reality sense in dreams exerts a onirogenic effect on the waking mind.

Finally, some empirical studies of imagery are consistent with these impressions that dreams appear real while dreamed. Some studies have compared everyday dream and waking imagery and have shown that the former in general appears more realistic than the latter [13, 14]. Other studies have reliably measured the frequent occurrence of features indexing reality-construction in the dream [26]. Finally, the finding that even persons exceptionally prone to waking fantasy do not ascribe realistic properties to their 'hallucinated' waking images, i.e., do not image events or things 'as real as real' in the waking state [27], suggests that dream imagery may be unique in its capacity to perform this function reality mimesis.

Dream Reality has Somatic Origins

Freud's and Foulkes' analyses suggest that dream realism does not depend upon visual or auditory imagery for its occurrence. Foulkes supports this position with the finding that dreams of the congenitally blind are no less real than those of sighted person [25, pp. 37-38]. Somatic processes seem to be the likely alternative source of dream realism. The following dream protocol from the personal diary of the blind and deaf author, Helen Keller, demonstrates how somatic sensation may be sufficient to account for the reality quality of an extended and coherent dream sequence:

I sprang up into the air, and was born upward by a strong impulse, I could not see or hear; but my mind was my guide as well as my interpreter. Higher and higher I rose, until I was very close to the stars. Their intense light prevented me from coming any nearer; so I hung on invisible wings, fascinated by the rolling spheres and the constant play of light and shadow, which my thoughts reflected. All at once I lost my balance, I knew not how, and down, down I rushed through empty space, till I struck violently against a tree, and my body sank to the ground. The shock waked me up, and for a moment I thought all my bones were broken to atoms [28, p. 358 'My Dreams'].

Consisting almost entirely of somatic imagery, such a dream should have appeared acutely real to Helen Keller, despite its 'unrealistic' story line. This was, in fact, the case; she described such dreams as possessing an 'enormous reality and vividness' [29, p. 277].

Other researchers concerned with Freud's notion of the hallucinatory quality of dreaming have extended his analyses of somatic stimuli in dream content. It is now known that approximately 95 percent of all REM dreams preserve the self-orientation of waking perception [30]. This may reflect the physiological observation that mechanisms akin to the orienting reaction are extremely active

in REM sleep [31]. In the waking state, such orienting reactions are known to modulate activity in the skeleto-muscular system, inducing, for example, sensations of weakness or paralysis during strong emotion [32]; it is possible that similar changes in somatic sensation are induced during REM sleep as well.

Additionally, 70 percent of REM dreams preserve some type of affect [33], and at least 70 percent some type of self-movement [34]. It is also thought that kinesthetic and vestibular processes contribute to the 'total hallucination of the self' during dreaming [35, 36] a finding consistent with the fact that the vestibular nuclei of the brain is vital to the generation of dreaming sleep [37]. Additional reviews of somatic sensation during dreaming can be found in Lerner [36] and Nielsen [20].

Finally, the research available on dream incorporation suggests that the likelihood of a stimulus presented in REM sleep directly entering the story line of a dream is much higher for a somatic stimulus (42%) than it is for a visual (23%) or an auditory (9%) stimulus [38]. A study of somatosensory stimulus incorporation (40%) replicated this work [39]. These findings, together with results from the study of somatosensory transmission in the sleeping monkey [40], suggest that somatosensory pathways are active during REM sleep, despite their modulation by muscular atonia [41].

To summarize, the sense of reality that occurs during both waking (as described by James) and dreaming (as described by Freud and others) has been described in similar somato-sensory terms. That is, the reality sense in both states has been described as somatically-based: a self-reflective awareness of the bodily self—oriented, feeling, and participating in the terrestrial environment. These sensory sources of the reality sense (kinesthetic, cutaneous, vestibular, affective) are likely modified, but not entirely eliminated, by the inhibitory processes of dreaming sleep.

II. HEIGHTENED REALITY SENSATION IN THE DREAM STATE

The theory of reality mimesis outlined above provides an alternative means of describing what has been referred to as the 'ordinary' or 'mundane' quality of most dreaming [25, 30]. Reality mimesis of ordinary life experience is typically so effective in dreaming that we judge dreaming, too, to be ordinary! But it may be just this introspective oversight that renders oneirogenic effects so difficult to observe in everyday dreams. Rather, oneirogenic effects may be more easily observed following reality dreams, when intensification of the reality sense leads to more vivid simulations of waking state reality. Total or near-total realism may occur sporadically, as brief, lifelike moments interspersed throughout an otherwise prosaic dream script; or it may occur as a sustained period of hallucinatory realness that is qualitatively indistinguishable from wakefulness.

Sometimes, it may take on a quality of realness which is much more intense than typical waking reality.

In general, reality dream events are accompanied by a subjective impression of active awakensness or self-awareness. The experience is often described with very animated and absorbed speech, with accompanying expressions of bewilderment, surprise, and other strong emotion, and with exclamations such as 'It was so real!', 'I thought it was really happening!', 'I was so relieved when I woke up!' Further, some time after the dream, there may arise an uncertainty as to whether certain remembered events were dreamed or actually took place [42, 43].

Reality dream experiences constitute a large class of phenomena and they cut across the boundaries of many previously defined dream types. Reality dreams have been reported in laboratory research reports and in the nonexperimental literature as well. Laboratory examples of reality dreams, followed by a rough classification of such dreams according to the prevalence of a predominant somatic sensation, are described below.

Laboratory Reality Dreams

The following observations concerning reality dreams in a laboratory experiment were made by Cohen [44]:

One subject dreamed that the reference wire (attached to the ear) was too short . . . he asked the experimenter if it could be lengthened. The experimenter declined, saying something about possibly "messing up the frequency." The experience was so vivid and realistic to the subject that he says during the actual interview subsequent to the dream: "Oh boy! It seemed like you came in here and we were talking about this stuff. I can't separate what's happening now from what was happening in the dream. I might be in the dream right now!" [44, p. 260].

Notice in this report that the intense reality experience appears to have started with specific somatic sensations arising from an ear electrode—possibly due to sensations of pressure or pulling caused by a tangled electrode wire—and it ends with the felt presence of the experimenter near the bed. This participant was clearly so moved by his dream experience that he continued to question the validity of his reality after awakening and recalling his dream. This questioning constitutes an elementary oneirogenic effect.

With the help of volunteer participants in the sleep laboratory of Don Kuiken at the University of Alberta, I induced similarly vivid reality dreams in which bodily themes were clearly present [20]. The volunteers were administered somatic stimulation by inflating a blood pressure cuff around the right leg during REM sleep and then were awakened and asked to report their dreams. The following five reports are the clearest examples we observed of experimentally-induced intensification of reality sensation during dreaming:

- (a) I was lying here in the chamber, on the bed. I felt someone climb onto the bed. I thought at first it was you (the E), then that it was someone else, a stranger. I could feel his breath on my neck and back. I tried to signal you (the E) that I was awake, and I could feel my hands on the signal button, but I was unable to move. I was scared more by the paralysis than by the feeling of someone being behind me.
- (b) I was aware of lying on the bed in this room. I could feel pressure on my leg and was very fearful that you (the E) may have left the stimulator on too long. Sensations in my leg seemed to pour out into my chest where they turned into extreme terror. I tried to pound on the wall to let you know I was awake, but I was unable to move. This made the terror worse. Then I thought I had succeeded in hitting the wall and yelling for help. Unexpectedly, the intercom crackled and woke me up.
- (c) I was lying awake in the chamber when I heard you call my name over the intercom. You came in and sat down to collect a dream report. You asked me to lie still. You had your hand on my right arm and we were talking. Then you kissed me. I felt scared, thinking, "What are we doing?". You kissed me again. This time I responded and became passionately aroused. Then I woke up from the dream.
- (d) I was lying here on the bed. I was aware of velcro popping as my leg was being stimulated. At first I thought that the sound was your (the E's) dog in the corner smacking her lips, although I couldn't see her. Then I saw and heard water dripping from the ceiling into a puddle over in the corner. That's when I signaled that I was awake. Then I felt the presence of a person standing in that same corner, who was making a repetitive sniffing sound. There was no emotional tone to the experience.
- (e) I could feel my leg. You were standing in the doorway telling me that you were going to come in. My ears were popping and I heard my name. I wanted to tell you not to come in so that I could have a dream, but I was paralyzed. I moaned a couple of times to try to snap out of it, but I couldn't. Then you came over and touched my arm really lightly. I thought it was real, that you were really there! I finally woke up when you came in.

These dreams, like many others reported by participants in our studies, seemed irresistibly and subjectively real: sensations of orientation to the environment in space and time were salient, bodily imagery, movements, and attempted movements were vivid, and emotions were impactful; all as they would have been had the participants been intensely alert and awake. In fact, during these dreams participants believed they were awake, and their surprise on actual awakening reflected this fact. For a few confusing moments they experienced a restructured, novel, yet completely believable intensification of their dream reality sense. The induction of these reality dreams by somatic stimulation strongly supports the

contention that the reality sense in dreaming is based upon sensations arising from somatic sources.

To study such reality processes, subjects should be specifically and carefully queried about somatic imagery, or it may not be reported spontaneously. Somatic imagery may be less easily recalled than auditory or visual imagery [45] and has frequently been observed in our laboratory to be omitted, and then later recalled, from verbal reports of dreams following somatic stimulation. Dream collection protocols that raise or maintain participants' expectations about the importance of visual and auditory imagery fail to facilitate, or in cases may even suppress, accurate recognition and reporting of this less obvious dimension of experience.

Reality Dreams in Six Somatic Categories

Reality intensification occurs in many different dream contents, imagery without regard to particular auditory and visual contents. Rather, as illustrated in each of the five categories described below, reality intensification is typically associated with a particular somatic process, whether kinesthetic, cutaneous, vestibular, affective, or self-reflective in nature.

Of course, this separation of the reality sense into somatic components is largely a descriptive convenience. The somatic components more typically function as a unified or synthetic system. As is evident in the laboratory dreams just described and in the examples that follow, it is typical to observe more than one somatic theme in a single reality dream sequence.

(1) **Kinesthetic.** Kinesthetic sources of the reality sense are demonstrated most clearly by paralysis dreams. These dreams give the dreamer the impression of being awake and aware of the immediate surroundings, but also that body movements are impossible despite sometimes vigorous effort. Further, this type of reality dream frequently depicts a type of presence which is kinesthetically 'felt' to be near, on, or (more rarely) inside the body of the person. Laboratory dreams (a) and (e) reported above illustrate these combined features. Fear is sometimes associated with paralysis experiences, rendering them into torturous assaults [46-49]. The following paralysis dream provided by a patient with narcolepsy illustrates the often purely kinesthetic component of reality sensation in paralysis dreams:

On falling asleep or awakening, she would find herself completely paralyzed. She would feel . . . someone climbing onto her bed and on top of her. The pressure of this weight on her would be great, yet no one could be seen [50, p. 129].

(2) **Cutaneous.** The possibility of cutaneous sensations forming the experiential basis of a reality dream is illustrated by dreams of vivid, active touch, sometimes referred to as tangible dreams. The dreamer experiences with real-life vividness the surfaces and edges of objects in direct contact with the skin. Sensations of the texture or consistency of a dream object may frequently result from

haptic, exploratory movements that are initiated to test the reality of the dream situation. In contrast, the sensations may be imposed upon the dreamer as a passive recipient. The following excerpt was part of a dream reported by Green [51] as exemplary of a lucid dream even though it best illustrates the centrality of cutaneous sensations in producing the reality sense:

. . . I suddenly found myself on a fairly large boat travelling at a normal speed up what appeared to be the mouth of a river. . . . The deck was smooth and clean and warmed by the sun, and I felt the warm breeze on my skin. This startled me, because I knew that in a dream one does not feel actual physical sensations with the same intensity and subtlety as in real life, and I was sufficiently mistress of my own thoughts and movements to pinch my arm in order to assure myself that it was only a dream. I felt the flesh under my fingers and the slight pain in my arm, and this filled me with real alarm, because I knew that I ought not to be on that boat, in the daylight. I did not see my own body, but I was sufficiently lucid to imagine it, lying inert in my own bed here in Paris . . . [51, p. 104].

Realism in this dream very clearly follows from a sequence of cutaneous sensations; the dream lucidity in this case appears to have been a reaction to the sensation of a warm breeze on her skin in the dream.

Other types of hallucinatory imagery associated with REM onset which involve cutaneous imagery, such as the dreams of insects on the skin reported in delirium tremens [52], also fit this category. Salient active and passive cutaneous sensations occurred most clearly in experimental dreams (a), (c), and (e) reported above.

(3) *Vestibular*. Occasions of predominantly vestibular involvement in reality dreaming appear in dreams where submission to or defiance of gravity is salient. Flying dreams are one example of this category. These dreams are relatively typical in the general population [53], but may occur even more frequently among narcoleptic persons [54]. Such dreams include many variations on the theme of defiance of gravity: floating, elevating, bounding, soaring, swooping. These are probably not simply dreamed recollections of prior experiences of actual flight, because they were reported commonly even before the invention of winged flight [55].

Ellis states that no dreams are as vivid and convincing of reality as dreams of flying: '. . . none leave behind them so strong a sense of the reality of the experience' [29, p. 130]. He also provides examples which demonstrate how closely a sense of reality is linked with the vestibular sensations of dream flight. For instance, he reports Herbert Spencer found that three of twelve persons he queried had such vivid dreams of flying downstairs, and 'were so strongly impressed by the reality of the experience,' that they actually tried to repeat the act while awake. In one case this resulted in an ankle injury [29, p. 133].

A second example of dreaming in which the vestibular sense is salient is the falling dream. Like many other reality themes, the illusion of falling is commonly experienced at the moment of sleep onset. For example, a person dropping off to

sleep may dream of stepping off of a brink and losing his or her balance. The realness of the person's vestibular involvement is indicated by the inevitable reflex movement and the startled, yet relieved, awakening which follows. It is noteworthy also that the theme of suddenly falling down appears as a response to somatic stimulation during REM sleep, regardless of whether that stimulation is induced by a water spray [38] or a blood pressure cuff [20].

(4) *Affective*. Affective sensations in reality dreaming appear in many dream types, but are especially obvious in nightmares and sex dreams. Hartmann's laboratory studies prompted him to define a nightmare as containing both affect and realism [56]:

. . . an extremely intense version of the normal dream: It is reported as vivid, *extremely real*, in color, and having other nonvisual sensory experience; it is an extremely emotional dream; and it comes from an especially long REM period . . . ([56, p. 49], italics added).

On the basis of an extensive review of the pre-psychophysiological era literature, Jones also concluded that the vividness of some nightmares greatly exceeds that of normal dreams [57], and renders them indistinguishable from real events [57, p. 58, 74]. Mack's study of children's nightmares led to a similar conclusion [58]. The following example illustrates a lingering nightmare effect in a four-year-old child whose parents left her to sleep over with an aunt:

In the dream, a garden snake had climbed up her shoulder, and she had picked it off and thrown it to the ground. Then a big snake had come out of the wall until it was bigger than the room and had bitten off both her arms and legs. She dreamed that she was with her aunt, that her parents returned and went to her funeral, but that monsters came and killed her father after also tearing off his arms and legs. Soon everyone in sight was killed, including her mother; she awoke in terror and continued for two days to be convinced that the snake was still following her' [59, p. 71].

It should be clear from this example that although negative emotion and realism alone may constitute a nightmare, cutaneous and other somatic sensations also contribute to the experience. Experimental dream (b) above also illustrates the association between feelings of fear and the reality sense.

Dreams of eroticism and sexual intercourse also demonstrate the affective aspect of reality sensation. Such dreams are described by both sexes as being among the most vivid and emotionally potent [29, 59, p. 88]. O'Flaherty claims that 'The dream adventure of making love . . . most vividly straddles the line between reality and illusion' [60, p. 46]. In fact, the dream sensations of sexual arousal are often so real that the dream culminates in a nocturnal orgasm [61]. Experimental dream (c) above demonstrates the association between erotic affect and heightened reality sensation.

According to classical psychoanalytical theory, both sex dreams and nightmares may derive from the same basic affective source, namely, repressed erotic desire [57, pp. 76-77]. They may thus both contain the same potential for inciting highly

realistic dream experiences. Dreamed incubi and succubi sometimes occur in dreams as excruciatingly fearful nightmare demons and sometimes as irresistibly arduous sexual partners. For Jones, these themes demonstrate the essential similarity of nightmare and sex reality dreams [57]. It is worth noting the powerful onirogenic effect of sex dreams; the belief that intercourse can occur between humans and supernatural beings has been cited as one of the most widespread of human beliefs [57, pp. 82-97]. They are also implicated in witchcraft beliefs (see section IV below).

Other common, yet less extensively documented, affective dream subtypes may be associated with the reality sense, for example, sadness dreams and mirth dreams, from which the person may awaken so physically absorbed in the dream feelings that they continue to express their tears or laughter.

(5) **Self-Reflective.** The role of semantic self-reflection in reality dreaming is illustrated most clearly in the phenomenon of lucid dreaming. A lucid dream is a dream experience of being both 'awake and aware of dreaming' [62, 63], although there frequently also occurs voluntary control over some dream actions [64]. This control may even allow the dreamer to simulate extraordinary or impossible feats, such as changing physical shape or passing through solid objects. Lucid dreams, too, frequently portray vivid somatic sensations in addition to self-awareness [20, 63], as if it were the exceptional vividness of these sensations that provokes the dreamer's 'awareness of dreaming.' The following account of an experimental participant's lucid dream demonstrates the co-occurrence of self-reflective awareness, somatic sensation (cutaneous, vestibular), and dream reality:

... she said that she seemed to be lying in bed still awake, with someone's hands rubbing her neck. Recognizing the improbability of someone being in her room, she suspected she was dreaming, and tested her state by trying to float into the air. As soon as she found herself floating, she was convinced she was dreaming... [63, p. 90].

Notice in this dream that the cutaneous sensations of someone's hands rubbing her neck seemed to provoke this dreamer's self-awareness and reality-testing.

(6) **Other Somatic Dream Subtypes.** The preceding subtypes most frequently occur in the literature in relation to the reality sense and most clearly demonstrate the somato-sensory building blocks of reality sensation in dreams. However, many other sources of somatic sensation—not elaborated in this review—could play a role in producing reality dreams as well. Some of these include thermal sensations of hot and cold, dental sensations, sensations of pain [65], urinary feelings [66, pp. 439-465], thirst and hunger sensations, and other sensations of non-specific autonomic arousal. The role of these somatic sources in dream construction was reviewed by Freud [24, pp. 314-340]. Some of these sources are also evident in dreams described in the following sections.

III. DREAM-INDUCED SPIRITUALISM: THE THEORY OF ANIMISM

The present section serves as a link between the general theory and typology of reality dreaming introduced in the two preceding sections and the specific dream-induced beliefs described in the two following sections. The precise link between dream reality and dream-induced beliefs is the theory of animism as elaborated by Tylor [67] and subsequent writers. It is possible to demonstrate in these authors' formulations of animism some of the historical roots of the present claim that reality dreaming affects spiritual belief. Moreover, the five themes selected for review—the animism doctrines, the culture pattern dream, the basic dream, nightmares, and the free-soul concept—demonstrate just how deeply these roots extend: they reach to the very experiential core of spirituality and mythology.

Tylor's Theory of Animism

The theory of animism was put forth by Tylor [67] to explain beliefs in souls, spirits, gods, etc. (for a recent review of the theory see Kracke [68], and for an intriguing contemporary example of animism see Grindal [69]). The essence of the theory is that the 'ethereal images of bodies' encountered during dreaming and kindred states led dreamers to believe in the existence of souls [67, p. 450]. Dream experiences of souls thus were a major influence on both Spiritualism, and the Philosophy of Religion among primitive and civilized peoples [67, p. 10].

Tylor's animism theory includes some of the components of the reality sense described above. In rough outline, the theory contains two 'great doctrines' of spiritual belief. The first great doctrine concerns beliefs in a personal soul, specifically, that: 1) the soul is virtually non-visual, 2) the soul can volitionally depart from the body during sleep, and 3) the soul continues to exist after death or destruction of the body. Tylor's discussion of the dream origins of these beliefs suggests that he was at least partially concerned with a somatic body-image phenomenon [67, pp. 13, 24-29, 110]. For example, these beliefs were described by Tylor to result from dream experiences in which the 'soul' appears more as a kinesthetic 'presence' than as a visual image. Specifically, the dream 'soul' is a

... thin, unsubstantial human image ... a sort of vapour, film, or shadow ... mostly impalpable and invisible ... capable of leaving the body far behind, to flash swiftly from place to place ... to ... act in the bodies of other men, of animals, and even of things ... [67, p. 13].

This quotation may reflect more Tylor's beliefs about how the bodily self felt during a dream than his beliefs about how it appeared visually.

Tylor's second great doctrine of animism encompasses a cluster of beliefs in 1) the existence of spiritual beings, such as deities, ghosts, and spirits; 2) how such spiritual beings control the actions and destinies of human beings (e.g., illness and

drought, omens and visions); and 3) how human beings may, in turn, act to affect these beings' behavior (e.g., acts of reverence and propitiation). Although this doctrine was less clearly associated with somatic dream phenomena in Tylor's writings, subsequent writers have progressed in articulating these associations.

Animism and the Culture Pattern Dream

Lincoln accepted Tylor's view of the dream origins of animistic thought, and emphasized even more explicitly the importance of reality experience during dreaming in the production of such thought: 'The dream was the reality experience of the soul or shadow while the body slept' [70, p. 44]. A review of dream effects among the cultures of the American Indians, Australians, Melanesians, Polynesians, and Africans, led Lincoln to conclude that a wide variety of cultural items originated in a class of dreams he termed *culture pattern dreams*. Animistic belief in the soul was one such item originating in the culture pattern dream:

... a review of some of the evidence shows conclusively that from dreams the beliefs in the existence of the soul or double, in the continued existence of the spirits of the dead, and in the immortality of the soul, and in an abode of the dead, either originated or were in part derived. They occur in widely separated parts of the earth' [70, p. 45].

The reader is referred to Lincoln's extensive review of cultural items acquired in culture pattern dreams for further evidence regarding dream-inspired animism and onirogenic affects on culture among primitive peoples [70, pp. 44-98].¹

The culture pattern dream may have been similar to the reality dream category on a subjective, experiential level. The culture pattern dream is identified by the appearance of a dead father or ancestor spirit communicating an important message to the dreamer. These spirits were usually accepted by the dreamer as the real father or ancestor [70, pp. 94-95] and the appropriately intense emotions of hostility and fear, veneration and love, were expressed toward them [70, p. 96]. Lincoln's conclusion was that:

It is because the primitive mind often assigns a reality value to the fantasy world equal to that of the external world, and even has difficulty at times in distinguishing the two, that the dream is allowed to dictate in large measure the course of life' [70, p. 98].

According to the present thesis, these difficulties experienced by primitive peoples in differentiating dreaming from waking perceptions was due to the vivid realism of their dreams rather than to some impoverishment of their waking judgement. Culture pattern dreams were likely recalled as real encounters with

¹ Lincoln's review covers the cultural evolution of virtually every aspect of primitive life, including the acquisition of totems, demands for sacrifices, cures, charms and other powers, ceremonies, dances and songs, hunting procedures and tools, artistic insights, careers, secret societies, calls to war and religious conversion, names, dramas, and myths, to summarize but his major categories.

real persons, and thus may have been granted a special status in the collective world view of the group [71, p. 40]. In this manner, the degree of realism associated with dreams of the father figure may have been a major determinant of the culture pattern dream and of this dream figure's capacity to transmit culture [70, pp. 94-95].

It should also be noted out that the 'father figure' theme in culture pattern dreams is similar to the basic theme of many of the reality dream subtypes described above, especially paralysis dreams, nightmares, sex dreams, and dream-visions. Specifically, the reality sense in these latter types arises while the dreamer is in intense rapport or communion with some significant other character. The form of the content varies, of course, from the choking grip of an old hag or demon, the nurturing embrace of a lover, or the numinous presence of a counselling ancestor, but the reality intensity of the rapport or communion in all cases may be similar. The frequent appearance of such compelling 'others' in reality dreams suggests that the vivid feeling of another's presence may be a basic, though still unexplained, manifestation of somatic sensation in the dream state.

Animism and the Basic Dream

Roheim, more than other authors, extended animism theory to account for the dream origins of mythology [66]. For Roheim, waking experience played a distinctly secondary role to dream experience in the genesis of myth (e.g., [66, p. 401]):

It seems that in the dream we have one of the most important sources of human culture. We might say that the colossal structure of fantasy we have built up from century to century actually starts in our dreams, or more precisely, when one human being finds it necessary to tell his dream to another ...' [66, p. 115], italics original).

Roheim's explanation of how animism creates myth is two-fold. On the one hand, he suggests that a subset of psychoanalytic dreamwork processes, such as metamorphosis, wish fulfillment, double formation, condensation, and displacement, continue to stimulate fantasy formation during wakefulness [66, p. 115].²

On the other hand, Roheim suggests that the reality quality of the dream stimulates mythic fantasy by compelling the dreamer to communicate dream content to others:

In a period when dreams were taken as real events they must have contributed materially to myth formation and to beliefs. . . . The dreamer . . . is not sure about the reality of the dream, and this reality-unreality situation upsets him and he wants to achieve stabilization by telling another person what had happened at night' [66, p. 115].

² A similar hypothesis has gained some support in laboratory tests of the REM 'carry-over' effect [72], and the 'uncovering' phenomenon accompanying dream reflection [10, 11].

Myth may thus be stimulated by dreamwork 'carry-over' or by the social contact engendered by the peculiarity of dream reality.

However, Roheim's description of the *basic dream* type [66, pp. 1-133] reveals even more specifically how somatic sources may underlie the myth-building effect of dreams. Basic dreams resemble reality dreams in that basic dreams revivify and express 'remembered' somatic sensations that accompanied intra-uterine development and birth. To illustrate, basic dreams bear the intense vestibular imagery of flying dreams (e.g., Roheim's dreams of 'the body flying or descending' [66, p. 116]), the vivid affect of sex dreams (dreams with 'genital libido cathexis' [66, p. 116], the cutaneous imagery of tangible dreams (dreams of 'passing through narrow gates' [66, p. 117]), and the sense of wakefulness common to all of these types ('a state of being half awake' [66, p. 117]).

Also consistent with the present hypothesis that reality dreams affect spirituality is Roheim's conclusion that basic dreams were the primary creative source for a variety of mythic genre. Creation myths perhaps most obviously reflect the contents of the birth memories from which basic dreams are believed to arise [66, pp. 423-430]. However, the dream's theme alone was likely insufficient to gain it entry to the culture's mythic lore; the somatic sources adumbrating the theme with a sense of reality were probably also required. From Roheim's unique perspective, this sense of reality likely baffled the dreamer, provoking an altered spiritual view of the world, but it likely also guaranteed that the dream would be communicated to others, and thus insinuated its accompanying theme into the mythic lore of the culture.

Animism and Nightmare

Several early authors ascribed powerful dream effects to nightmares in a manner consistent with the present focus on reality dreams (see [57, 73] for reviews). Laistner, for example, stated:

The intensity of the apparitions in nightmares is far greater than in the ordinary dream-images, so much so that the subject when awake is fully convinced that he has not simply had a dream. The impression exceeds the most vivid intuition of the person's waking imagination . . . and so there can be no doubt that the living belief in nightmare monsters can be explained most simply by the vividness of the dream presentations' ([74] cited in [73, p. 9]).

Laistner clearly recognized both the reality sense of nightmares and the animistic beliefs originating from them. However, some have taken exception to Laistner's bold speculation that the nightmare is 'the chief and basic principle of all mythology' [73, p. 58].

From an extensive review of the nightmare literature, Jones adopted a less extreme position than Laistner [57], but he nevertheless concluded that dreams and nightmares were central ingredients in the genesis of many animistic beliefs.

The most prevalent onirogenic beliefs he identified resemble those identified by Tylor [67], but included some new variations as well:

- (a) a personal soul capable of acting in or apart from the body,
- (b) a personal soul that survives death and visits the living,
- (c) night flights through the air,
- (d) the transformation of human beings into animals and into other human beings,
- (e) the existence of fabulous and supernatural beings, including nocturnal demons, vampires, werewolves, witches, etc.
- (f) the identity of animal spirits with ancestor spirits.

Jones concurred with Roheim [66] that nightmare effects extend into the domain of mythology. He felt that nightmares provide raw, primary process material for the construction of myths [57, p. 66]. He recognized that highly emotional dream themes, e.g., dreams of dead persons, animals, and animal-human metamorphoses, were especially likely to affect waking belief [57, pp. 68-72], and he emphasized that nightmare characters were a rich source for the creation of fantastic mythical creatures. The fact that folklore accounts reflect the belief that nightmares are sexual assaults by lewd demons [57, pp. 77-78] illustrates this emphasis.

Animism and the Free-Soul

Of the several extensions of animistic theory here reviewed, the one most clearly reflecting dream effects due to somatic experience during dreaming is the theory of the *free-soul* put forth by Hultkrantz [75, 76]. In general, Hultkrantz accepted the idea that dreams comprised an experiential basis for soul-belief among the primitive North American Indians:

The visionary experience, in most cases probably a normal dream, has obviously been the decisive factor in the evolution of the *free-soul* [75, pp. 243, see also pp. 388, 396; 76, pp. 75-76, 109].

This *free-soul* was the most inclusive and fundamental of the many American Indian soul concepts, and derived its somatic nature, in part, from a particular sensory quality of dream experience. This was the subjective dream 'feeling' or 'ego-sensation' which emerged directly from the dream and allowed the dreamer a type of freedom from physical restrictions [75, p. 243]. Reality dreams of flying or journeying to the realm of the dead likely included such a somatic quality [75, pp. 61-74]. These somatically salient American Indian dreams bear a further resemblance to reality dreams in that they are described upon waking reflection as possessing a 'genuineness' or 'reality-value' [75, pp. 61-74]. Hultkrantz also identified several aspects of the dream's narrative structure implicated in the onirogenesis of mythology. He stated that dream structures affected many

common American Indian myths, above all the Orpheus myth complex [75, 76], in which a native hero figure (Orpheus) journeys precariously to the land of the dead. Dream processes affecting the evolution of this myth included the familiar appearances of death souls as 'airy, volatile' figures identified in Tylor's first great animistic doctrine, but also the fantastic changes of scene witnessed during the hero's heavenly ascents and swift transportations, impediments to the hero's journey by great conflagrations, dangerous monsters, shaking bridges, etc., and multiple iterations of identical actions and themes [76, pp. 75-76]. Such structural aspects of dreaming play an as yet undetermined role in the formation of reality dreams (cf. [25, pp. 40-42]).

To summarize, the general theme of reality dreaming as an experiential source of spiritual belief can be identified in Tylor's formulation of animism and subsequent elaborations of the theme by Lincoln, Roheim, Jones, and Hultkrantz. If one keeps in mind the fact that each of the authors reviewed in this section himself has reviewed vast literatures in ethnology, anthropology, psychoanalysis, psychology, etc. in arriving at his formulations, the near-universal scope of dream effects in the history of civilization is more easily appreciated.

IV. MALEVOLENT ANIMISM: HAGS, DEMONS, WITCHES

As the preceding section documented, authors have recognized the transformative effects of dreaming and they have identified some of the somatic sources of these effects. The present section will illustrate how dream effects—and above all reality dream effects—can be discerned in the literature on spiritual belief. A small selection of examples will be reviewed to demonstrate that reality dreams, identifiable by their expressions of intense somatic imagery, have been implicated in the development of beliefs in malevolent other-than-human beings.

Old Hag and Ghost Assaults

A long-standing tradition of animistic belief which still holds considerable currency in some regions today is the belief in malevolent creatures, frequently called *Old Hags*, that appear in the night to oppress and terrify sleeping persons [49]. Old Hags appear either in response to someone else's curse, or of their own volition. To be 'hagged' or 'hag-ridden' is to experience the dreaded weight or presence of a malicious spirit on or near one's body, and to be unable to act or call out against it. This supernatural nocturnal assault tradition is especially visible in Newfoundland folk stories about the appearances and activities of Old Hags, and about methods of conjuring them, protecting oneself against them, and ridding oneself of them [49, pp. 1-11].

The Old Hag tradition is very clearly founded upon reality dreams in which paralysis sensations, kinesthetically 'felt' presences, and affective imagery prevail—these have been termed Old Hag dreams [49]. That Old Hag dreams are

realistic is strongly suggested by Hufford's list of their primary experiential qualities: 1) a subjective impression of wakefulness, 2) a realistic perception of the actual environment, 3) immobility (e.g., paralysis, restraint), and 4) fear [49, p. 25]. These are, of course, the main experiential features of paralysis dreams as well. They define a background state of (waking) consciousness rather than a depiction of specific, visual or auditory dream contents. Components considered by Hufford to be secondary to the definition of Old Hag dreams are also somatic in nature: 5) supine position, 6) feeling of presence, 7) feeling of pressure, usually on the chest, 8) numinous quality, and 9) a fear of death [49, p. 25].

A typical Old Hag dream is provided by Roscher [73] of an eighteen-year-old girl with advanced tuberculosis and great difficulty breathing. She experienced, whenever she fell asleep, a horrible dream of her dead grandmother coming in through the window and kneeling on her chest in order to crush her to death [73, p. 14]. Some features of Old Hag dreams also occurred in the dreams experimentally altered by kinesthetic stimulation in our laboratory. For example, in dream (a) the participant felt (but never saw) a presence climb onto the bed, lie down behind her, and breathe on her neck. She associated her fear at this point with her inability to move or call out.

Hufford, like Jones, moves beyond the obvious connections between Old Hag paralysis dreams and Old Hag beliefs, to trace links between the dreams and spiritual beliefs. He identifies connections between Old Hag dreams and folklore accounts of witches, ghosts, vampires, and demons. He also identifies associations between Old Hag dreams and beliefs in UFO invaders and 'out-of-body' experiences. His most compelling examples of how Old Hag dreams constitute a subtle experiential source of animistic beliefs derive from transcripts of first-hand reports of contemporary ghost hauntings [49, pp. 172-211]. For example, repetitive Old Hag dreams such as the one excerpted below were central to the genesis of a case of ghost haunting investigated in Kentucky in 1975:

I looked back at the doorway and there was this bright shimmering . . . substance . . . this very vaporous looking thing. And as soon as I saw it, I was just stiff. And I couldn't move. I was just s-s-scared stiff. Paralyzed! And it just sort of floats over to the foot of the bed. And I heard this "hhhhhhhh-hhhhhhh" heavy breathing, and I thought, "Oh, my God!" And I'm rationalizing, I'm saying "It's a dog! It's a dog! It's me! It's *me* breathing!" And so I held my breath and the breathing continued. And then it abruptly stopped. And whatever it was came around to the side of the bed and walked behind my back . . . I couldn't move! . . . all up and down my back was just *intensely* tingling . . . I felt pressure on the bed . . . whatever it was came back to the foot of the bed. Just hovered there for a while. Went over to the door. The door closed behind it. And then the rocking chair in the hall started rocking . . . it was like the presence had left . . . [49, pp. 185-186].

Other unusual events experienced by this person in his old and isolated house, in combination with these types of Old Hag dreams, produced the animistic conviction that the house was haunted by ghosts.

To summarize the preceding, evidence that Old Hag paralysis dreams can lead to beliefs in the existence of assaultive nocturnal creatures is consistent with the oneirogenesis theory proposed here. It suggests, in a manner complementary to the research of Tylor, Jones and others, that nightmares continue to propagate beliefs in ghosts, witches, vampires and other demons, even in contemporary times.

Demon and Devil Assaults

Without question, a whole spectrum of beliefs in evil demons can be traced to various nightmare experiences [57, 74]. Creatures such as Pan, the Satyrs, Faunus, and Sylvanus have been described since the Hellenic era as demons who appear during the nightmare state [73, pp. 58-81]. However, it can be argued that creatures even less obviously associated with nightmares also originated in nightmare experiences. For example, evolution of the concept of the Christian devil—not a classical nightmare demon, but historically the most horrible of the pantheon of evil demons—can be reliably traced to an assortment of these older and less sinister demons [57, p. 183]. Pan, the goat-god, whose sudden appearance in dreams incited a state of panic in dreamers, is one such antecedent demon.

Of course, it is true that once a concept such as the Christian devil has been formulated and entrenched in religious dogma, its cultural transmission is more completely ensured, and the causal role of nightmares in fostering the belief might seem obscure. However, nightmares likely continue to play a role in the personal validation of such concepts. That is, exceptionally realistic nightmares of the devil may animate the abstract religious concept of devil with an undeniable and causally potent existential validity not easily gained by religious instruction alone. Such personal validation may have as much or more to do with the continuation of a belief as does routine religious instruction.

Witchcraft Beliefs

If dreams inspire beliefs in the existence of malevolent, extra-human beings, it should be no surprise that references to oneiric contacts with such beings occur repeatedly in the witchcraft and demonology literature. In fact, evidence that such contacts occur through reality dreams abounds. Three examples of how reality dreams affected witchcraft beliefs are discussed below: 1) dream phenomena during witch-hunts of the Inquisition, 2) the dream origins of beliefs in white witchcraft, and 3) dream-based witchcraft beliefs in African culture.

Witchcraft Beliefs and the Inquisition

It has been suggested [77] that the Salem witchcraft hysterics of the 17th century were in response to hallucinatory poisonings from the ergot fungus, a rye

crop contaminant bearing lysergic acid diethylamide (LSD). In other words, witchcraft reports may have been based on subjectively 'real' encounters, and the Inquisitorial hysteria may have arisen as an attempt to suppress or punish these encounters. Although this theory of the origins of witchcraft is improbable [78], the principle that witchcraft beliefs were grounded in subjectively 'real' experiences remains a sound one. According to the present hypothesis, however, these 'real' experiences were reality dreams and not LSD hallucinations.

Indications that reality dreams contributed to the witchcraft craze are found in one of the earliest printed books, the *Malleus Maleficarum* or *Hammer of the Witches* [79], which was authored by two Dominican monks and was sanctified by Pope Innocent VIII. This influential volume presented the definitive criteria for identifying witches and it provided prescriptions for eliciting confessions of witchcraft activity under torture. The book was designed to implement the biblical command of Exodus 22:18, 'Thou shalt not suffer a witch to live.'

Several of the criteria for witch identification referred to animistic dream themes: bodily vegetation, or the ability to be bodily transported or fly from place to place; bodily metamorphosis into animal forms; and the practice of 'carnal connexion' with Incubus devils [79, p. 104]. The latter criterion, which most clearly includes the reality dream themes of sexuality and paralysis, was given particular prominence in the *Malleus Maleficarum*; it was considered an attribute of all witches, whereas other abilities, such as vegetation, destruction of crops, inflicting injury on men, and so on, were attributed only to the exceptional or 'chief class' of witches [79, p. 99]. The extent of oneiric influence of this theme alone is indicated by the five chapters of the book in which Incubus and succubus activities are described in considerable detail, and remedies for their occurrence dictated.

The *Malleus Maleficarum* fostered an oppressive attitude toward witches for several centuries; it was published and republished in twenty-nine editions between 1486 and 1669. It has been described as the book which 'opened the floodgates of the inquisitorial hysteria' [80, p. 337]. The fact that dictums in the book were applied for so many years suggests that the animistic beliefs giving rise to its conception were remarkably robust at that time. Possibly this was because dream experiences contributing to these beliefs, i.e., paralysis dreams, nightmares, and flying dreams especially, were more prevalent or more vivid among some people at this time. One possible factor perpetuating such a proliferation of dreams, of course, may have been the abusive Inquisitorial system itself. The unrestrained use of torture by the system may have dramatically increased the incidence of post-traumatic stress disorder nightmares, which are as vivid, frightening, realistic, and laden with assaultive and sexual content as any other nightmare types [81-83].

White Witchcraft Beliefs

Reality dreams may also have affected animistic beliefs in the existence of benevolent witches. Examples of such effects are documented for Friuli, a northeastern Italian region on the Adriatic, during the period c. 1550-1650 [84]. In this region, benevolent witches (*benandanti*), declared openly to Inquisitors that they were regularly compelled by angels of God, or by other *benandanti*, to go forth at night from their beds, either 'in spirit,' or in the form of small animals, to fight with witches and warlocks. Further, they professed that they attended nocturnal gatherings with other *benandanti* where witches were often present [84, p. 4]. The objectives of these nocturnal gatherings were not evil, despite their treatment as such by the Inquisition; rather, they were originally intended to secure fertility of the fields and abundance of the harvests [84, p. 28]. The following excerpt is typical of the phenomenon:

A certain invisible thing appeared to me in my sleep which had the form of a man, and I thought I was asleep but I was not . . . I thought I heard him say "you must come with me because you have something of mine;" and so I told him that if I had to go I would, but that I did not want to depart from God; and since he said it was God's work, I went . . .' [84, p. 12], italics added).

The accused *benandanti* never doubted the reality of their nocturnal struggles and gatherings [84, p. 16], a fact suggested by their testimonies. Ginzburg, however, was able to attribute the experiences to either pathological physical states such as hysteria, catalepsy, or epilepsy, or to the purposeful pre-sleep application of creams and unguents [84, pp. 16-18]. Ginzburg was apparently unaware of the familial sleep paralysis and narcolepsy syndromes, whose accompanying paralysis and flying dreams might provide a much more parsimonious explanation of the phenomenon.³

Another factor suggesting that the nocturnal battles of the *benandanti* originated in somatic dreams is that these persons were said to have been 'born with the caul,' i.e., to be wrapped in the embryonic sac or umbilical cord at birth. Such birth factors may contribute to fetal distress syndromes, the symptoms of which in Western cultures can manifest later in somatically vivid adult nightmares of suffocation [88]. It is noteworthy that among the Yurak-Samoyed of Siberia,

future shamans were identified by the same characteristic, referred to as being 'born with their shirt.' As these individuals matured, they began to have visions, sing in their sleep, wander in solitude [89, p. 16], and eventually acquire the mature shaman's abilities of seeing, battling, and obtaining help from spirits in dreams and trances [89, pp. 84-95]. This phenomenon appears also to instantiate Rohcim's theory of the birth origins of the 'basic' dream type, described above as a type of reality dream.

African Witchcraft Beliefs

Accused witches in the Friuli region were likely induced over time to alter their testimonies to accommodate conventional witchcraft dogma; they likely altered their 'witchcraft' behaviors as well to conform to this imposed interpretation. Their compelling dreams, in combination with the sinister religious interpretations imposed upon them by the Inquisition, may eventually have compelled these victims to fulfill the appropriate 'witchcraft' roles expected by their persecutors. An example of this kind of process has been observed among the tribal Temne Africans in Sierra Leone [90, pp. 321-322]. These natives were frequently affected by certain dreams that seemed so objectively 'real' that they were incited to adopt the extremely negative self-image of a witch.

Dawson found that the Temnes frequently would have a type of 'witch' dream following actions of real or imagined neglect of others or following some other wrong-doing. Most had recently lost one or more children. For example, one mother, after the loss of her second baby, dreamed that she, as a witch, had given up her baby to be eaten at a ritual meeting of a witch cull. According to Dawson, the dreams were a form of guilt reaction, and the events in the dream seemed to the dreamers synonymous with reality; furthermore, following such a dream 'the woman firmly believes that she has become a witch' [90, p. 322]. The firmness of these beliefs is further seen in the person's willingness to falsely confess to the crimes depicted in the dreams in an attempt to be cleansed of the witchery. The extent to which such negative self-transformations were incurred by the Inquisition is yet unknown.

V. BENEVOLENT ANIMISM: INCUBATION HEALING, DREAM-VISION

Reality dreams were also identified in the literature pertaining to beliefs in benevolent spiritual forces. This was especially true for beliefs in which the existence of healing deities and guardian spirits figured prominently. It is likely that realistic epiphanies of sacred figures in dreams were one first-hand source of information about the intentions, powers, activities, etc. of these figures and, thus, of the details of their associated myths. Instances of epiphany as dream realism

³Note, however, that the application of creams and unguents [84, p. 346] is also a feasible explanation of these dream phenomena. Such applications could have produced a constant source of somatic stimulation during REM sleep which would have affected the kinaesthetic structure of dreaming. In support of this possibility, several experiments (20, 38, 85) have shown that such stimuli are among the most potent means of altering dream content, and in particular, of altering dream kinaesthesia. Cubberly [86] demonstrated that applications of small amounts of oils or creams to the skin prior to sleep were sufficient to induce dreams with an 'upward tendency' toward flight although did not induce dreams of flying *per se*. Several examples of dream alteration with kinaesthetic stimulation are also cited above. For further examples of dream incubation with somatic stimulation see Nielsen [87].

occurred in two highly similar spiritual dream-use traditions: *incubation healing* [91] and *vision quest* [92].

Incubation Healing

If it can be shown that reality dreams were involved in the rise to popularity of the ancient Greek incubation healing cults, and in their subsequent spread to Rome, medieval Europe, and elsewhere, then their influence on the growth of contemporary culture can be said to have been substantial; these healing cults eventually influenced the progress and form of both medical science [93-95] and Christianity [96], two institutions with continuing widespread influences on contemporary thought. There is, in fact, evidence that reality dreams played a role in the rise of these cults.

Among followers of the earliest Greek dream cult deities, Trophonius and Amphiaraus, it was held that the gods could be contacted in dreams by 'incubating' or spending the night sleeping in their subterranean caves. These gods were believed to reside in the caves in bodily form and to make actual, physical contact with the person in the dream state [97, p. 106]. Meier summarized the early Greek attitude toward these dreams as being:

... something that *really* happened . . . not, as it was in later times and to "modern man" in particular, an imaginary experience ([91, p. xiv], italics added).

The natural consequence of this attitude was that the Greeks actively solicited such dream visitations for spiritual and physical benefit, and thus fostered an unprecedented growth in the numbers and varieties of incubation cults. Even during the height of the later Asclepian incubation cults, when cave incubation was abandoned for more comfortable sleep in the temple environment, preserved records indicate that the general attitude of the Greeks was that these epiphanies of the gods 'actually happened' [98, ii, p. 155].

The following incubation experience of a temple minister is one of many experiences recorded by the Roman orator, Aelius Aristides, concerning his visits to the shrines of Asclepius at Pergamum in the second century A.D. The report illustrates the reality nature of the dream incubation experience:

The revelation was unquestionable, just as in a thousand other instances the epiphany of the god was felt with absolute certainty. You have a sense of contact with him, and are aware of his arrival in a state of mind intermediate between sleep and waking; you try to look up and are afraid to, lest before you see him he shall have vanished; you sharpen your ears and listen, half in dream and half awake; your hair stands up, tears of joy roll down, a proud kind of modesty fills your breast. How can anyone really describe this experience in words? If one belongs to the initiated, he will know about it and recognize it [99, p. 54].

Several features of the reality sense found in dreams are intimated in this example, among them: the reference to a half-awake state, the kinesthetically felt presence of the god, muscular inhibition, and heightened affect (see also an alternative translation in [98, ii, p. 154, testimony 417]). Other ancient descriptions of incubation dreams echo the non-visual, somatic engagement characteristic of reality dreams:

Then a mysterious and incorporeal atmosphere surrounds them as they lie, such as does not touch their eyesight, but affects their other senses and sensibilities, murmuring in the entrance and penetrating everywhere without touching anything, working wonderful works to rid them of suffering of soul and body [96, p. 5].

Dream-Visions

Traditions of dream incubation in ancient Greece bear a close similarity to traditions of dream-vision quest among the early North American Indians. Vision quest, like incubation, involved a pre-sleep preparation designed to solicit a sacred dream [87].

Dream-visions also provide evidence of reality dream effects; in fact, they are perhaps the exemplary reality dream type. The simulation of the waking state reality sense in dream-visions is so complete that it may be reported with almost no qualification as having been a waking experience. Dreams induced experimentally in modern times with a technique modeled on the ancient Asclepian incubation rituals provide even further corroborating evidence that the dreams' reality sense contributes to an alteration of waking belief [100]. Reed put participants through extensive pre-sleep ritual activities prior to having them sleep alone in a forest tent. Several of the participants reported dreams which were altered by this procedure. They reported in some cases what Reed referred to as 'visionary' dreams; the dreams fit the classification of reality dreams quite well:

... the setting of the vision was within the tent itself, where the incubant was visited by a strange presence. The vision would end when the incubant awakened, but *leaving the person confused whether the event really happened or was a dream* . . . [100, p. 65], italics added.

The most dramatic of these experimentally-altered dreams, reported by an intelligent and creative twenty-six-year-old woman, prompted Reed to suspend further studies until the effects of such dreams could be assessed more thoroughly. This dream is a striking example of the reality quality of a healing dream-vision:

She awoke, startled to find that a strong wind was blowing, and that the tent had blown away. A small, old woman appeared, calling out the incubant's name, and commanded her to awaken and pay attention to what was about to happen. The woman said that she was preparing the incubant's body for death and that the winds were spirits which would pass through her body to check the seven glands. The incubant was at first afraid, then took comfort in the old woman's aura of confidence and authority, and finally yielded her body to the

experience, almost pleased with the prospect of death. During this time, the incubant saw before her a large luminous tablet, containing many columns of fine print which detailed her experiences in her past and future lives. The vision ended abruptly, and the incubant found herself lying within the tent as if she had awakened from a dream [100, p. 66].

This reference to apparent wakefulness during the dream-vision as well as evidence of somatic imagery in its make-up suggests that it was a reality dream. Moreover, the woman's subsequently reported experience indicates that the dream had a powerful and enduring effect on her spiritual view of the world:

She reported that this experience was qualitatively different, however, from any of her other dreams or psychedelic experiences. In her most recent letter, written several months after her incubation, she said that her visionary experience effectively revealed to her how her existence is not dependent upon her physical body [100, p. 66].

Reed's results, though preliminary, link the phenomenon of incubated dream-visions with reality dreaming. They furthermore demonstrate the sometimes profound psychological changes produced by such experiences.

The almost total realism of dream-visions renders their identification problematic. In the anthropological literature on visionary experience, confusion of the terms 'dream' and 'vision' is extreme [101, p. 445], suggesting that occurrences of true 'visions,' i.e., hallucinatory experiences in the awake state, may be grossly overestimated. For example, verbatim accounts of legendary North American Indian visions [102] suggest that even awake visions are, in fact, often dream-visions. Specifically, such accounts frequently make explicit reference to states of sleeping and/or dreaming which were coincident with the experience. Even when such is not the case, the visions are often reported to occur at night, when the person is supine, motionless, undisturbed, with closed eyes, or after episodes of great exertion or fatigue [89], i.e., when the probability of the person being asleep and dreaming is high. It is also relevant that even though other methods of inducing waking visions are widely known, especially the use of hallucinogenic drugs [103], these methods may have produced their effects in many cases by increasing the reality quality of later sleep and dreaming. Hallucinogens, for example, increase the vividness and nightmarish quality of dreams ([104]; see also review in [56]).

This question of the confusion between dreams and visions is not trivial. If visions are predominantly a reality dream phenomenon, their widespread occurrence reflects how equally widely reality dream experiences have influenced the spiritual evolution of civilization. How widespread this influence is may be impossible to state with confidence. Visions are considered to be a primary experiential source of religious tradition [101, p. 445, 105, p. 40] and techniques of imagery control designed to induce religious visions are nearly universal [101, p. 444]. The particular contribution of dream effects to these phenomena remains to be determined.

To sum up, historical evidence is consistent with the argument that incubation healing dreams and dream-visions were frequently a type of 'reality' phenomenon that played a role in the spiritual development of the early Greek healing cults and North American Indian cultures. In particular, these dreams affected animistic beliefs by generating realistic encounters with benevolent spiritual forces.

VI. CONCLUSION

The possibility that realism in dreaming alters waking spiritual beliefs is supported by literature reviewed in this chapter. Limited empirical research suggests that dreams may change affective and creative self-expression in the waking state [9-12]; but the larger historical literature suggests that even more fundamental and widespread animistic effects may exist. The present review indicates that beliefs in a wide variety of malevolent and benevolent spiritual beings may have originated in dream experiences that were colored by a vivid somatic realism. If dreams have affected spiritual beliefs to this degree in historical times, then there is a need to better understand the effects of nocturnal dreaming in contemporary times. The present work provides a framework from which such an understanding may be approached scientifically.

There is perhaps no recent writer whose personal life reflects the oneirogenic effects of reality dreaming more clearly than Helen Keller. Her dreams and creative writings reflect what was for her a painstaking struggle to overcome the isolating disabilities of deafness and blindness, and to grasp the meaning of her existence with some type of expressive fullness. In her quest, she found inspiration in the private world of her dreams. The trials of Helen Keller's dark, silent, yet richly animated world were clearly expressed in her vivid somatic dreams. One citation narrated by Jastrow is particularly apt:

Keller's early dreams were 'devoid of sound, or thought or emotion of any kind, except fear, and only came in the form of sensations . . . I dreamed at that time of a wolf, which seemed to rush towards me and put his cruel teeth deep into my body! I could not speak (the fact was, I could only spell with my fingers), and I tried to scream; but no sound escaped from my lips . . . the dream passed away in time and I began to dream of objects outside of myself [28, p. 353 'My Dreams'].

These reality dreams prompted her to acknowledge that a oneirogenic effect had shaped her creative life:

The enormous reality and vividness of these dreams is their remarkable point. They leave a mark behind . . . much that I have written, and many things that I have said and thought and believed, are directly due to these dream-experiences . . . in these dreams I peer over the edge of the conscious world into the giant-house and Utgard of the subconscious, lit by one ray of sunset that shows the weltering depths of it. And the vivid sense of this is responsible for many things in my life [29, p. 277].

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