

## Dreaming Consciousness: More Than a Bit Player in the Search for Answers to the Mind/Body Problem

MONTAGUE ULLMAN

*Clinical Professor of Psychiatry, Emeritus, Albert Einstein College of Medicine,  
55 Orlando Ave., Ardsley, NY 10502*

**Abstract** — What has not yet come clearly into focus in the current exploration of the mind/body problem is how the unique features of dreaming consciousness might contribute to the ongoing dialogue. Following a brief historical perspective, a theory of dreaming as nocturnal social vigilance is presented that takes into account both the genetic and social imperatives that shape the dream. The unique features of the dream are reviewed in the light of this approach. Organized outside the space, time and causality frame of waking thought, the dream takes on a presentational form and displays as metaphorical visual imagery the impact of recent feeling residues, their connection to the past, and their implications for current and future behavior. The genetic imperative makes its presence felt through the intrinsic honesty of these nocturnal confrontations, their concern with how genuinely connected we are with our past and with our way of relating to others. Through both its biological and social determinants, the ultimate concern of dreaming is with the unity of the species and its survival.

In a final section, analogies are noted between the interplay of waking and dreaming consciousness and some of the basic concepts of quantum mechanics. These include complementarity, uncertainty, interconnectedness and non-locality.

*Keywords:* dreaming consciousness — quantum correlations

### Introduction

The search noted in the title pertains to the resurgence of scientific interest in the nature of consciousness and the effort to take a fresh look at the mind/body problem in the light of our current knowledge of physics, neurophysiology, the neurocognitive sciences and philosophy. In a new journal devoted to a dialogue along these lines, there have been many passing references to dreams and the REM cycle (Carpenter, 1995; Flanagan, 1995; Clarke, 1995; Gray, 1995; Elitzur, 1995; Tart, 1995). There has been, with one exception (Atmanspacher & Primas, 1996), no extended discussion of dreaming consciousness. The latter authors, citing Pauli's interest in dreams and the unconscious, note that "...it would be overly naive and unwise to believe that the psychophysical problem can be ultimately resolved by science alone and to dismiss the non-rational side of the whole as irrelevant" (p. 124). Baars (1994) has written critically of Penrose's view of consciousness as abstract and platonist

in its derivation and far removed from all that we have learned about the unconscious dimension of consciousness through neurocognitive research. A similar criticism might be leveled at much of the discussion thus far of the puzzling connection of consciousness to quantum mechanics.

If the study of consciousness can shed any light on the mind/matter mystery, then consciousness should be considered in terms of its own dual nature. We are endowed with two natural and inexorable states of consciousness, one experienced in the waking state, the other while asleep and dreaming. I shall argue that these two different but interconnected states serve us in different ways, one concerned with our position as a player in the world about us, the other with the subjective impact of the way we play the game, one suitable for managing our affairs during our waking hours, the other registering the feelings and concerns that surface at night as a result of how we managed those affairs. For too long the virtues of the latter state have been obscured by the successful accomplishments of the former. After briefly comparing these two forms of consciousness, and a brief historical review, I will present a point of view about the nature of dreaming consciousness and the complementary role it plays in relation to waking consciousness. In a final section I will offer a number of analogies between the unique features of dreaming consciousness and some of the basic principles of quantum mechanics.

### **Consciousness: A Clear Duality**

As sentient creatures we experience two naturally occurring states of consciousness geared to serving the needs associated with the recurrent cycle of wakefulness and sleep. Waking consciousness, in its orientation to the way we experience the world about us, assumes as axiomatic the existence of time, space and causality. Asleep, during rather clearly demarcated periods of arousal, we experience a qualitatively different way of structuring our sense of what is real, one that is heedless of these three externally oriented categories and instead orients us to certain subjective realities that require attention. I refer to the way dreaming consciousness bypasses our ordinary and orderly notions of time and space, using them whenever needed to add to the metaphorical power of a dream image. The past may be co-valent with the present to express a common feeling tone. The spacing of characters or events in a dream may express emotional rather than spatial distance. The waking concern with causal relations is dispensed with in favor of a logic based on emotional contiguity.

Despite the strikingly different ways we experience waking and dreaming consciousness, there is a feature common to both that should be made explicit as it sometimes escapes notice. In both, the element of novelty plays an important part. Both forms of consciousness require an input of stimuli and the ability to assess their immediate significance. Both involve internal processing of the stimuli and both involve a response of some kind. Both are adaptive to the extent that they provide us with a more flexible approach to novelty than

would be the case were we limited to innate patterns of reflex response. Living in an outer and an inner world at the same time, we are faced with circumstances that are continually changing. Sensitivity to what is new and arising is an essential feature of our lives, awake or asleep. Depending on constraints arising out of our personal developmental history and the impingement of current social pressures, we have a greater or lesser degree of freedom in recognizing, processing and responding to what is new. We may manage it without any difficulty or fall back on defensive ways of denying or distorting it. Novelty is a call to change. Defensiveness is resistance to change.

Awake, novelty arrives in many guises — a flash of insight, tensions generated by unpredictable events, or an encounter with unexpected consequences of one's own actions, *etc.* Asleep and dreaming, the unresolved tension associated with the waking source of novelty becomes the focus of attention.

### A Brief Historical Note

There are certain general features of dreaming consciousness, first elaborated by Freud in 1900 in his classic volume on the interpretation of dreams, that have endured despite major revisions stimulated both by the experimental work on sleep and dreams and developments in psychoanalytic theory. The former set to rest the role of repressed impulses in initiating a dream. The latter moved away from the over-arching role Freud attributed to instinctual drives and childhood wishes in the shaping of dream content. Dreaming episodes are initiated by subcortical mechanisms governing cyclically recurring periods of arousal (the REM state) during sleep, and what we dream about arises out of a broader motivational base than wish-fulfillment.

Were we to separate out the metapsychological theoretical context in which Freud embedded his writings on dreams from the discoveries he made at an observational and descriptive level, we would be left with certain essential features of dreaming consciousness, namely:

1. Dream content is triggered by recent events which may have seemed trivial or unimportant at the time. Freud referred to these as the day residues.
2. Day residues set up a lingering tension derived from more remote experiences and affective residues from the past. It is the specifics of this linkage that defines the issue being dreamed about.
3. A dynamic tension is set up between an unconscious domain which harbored these older residues and the recent events in the life of the dreamer.
4. The tension is expressed in representational form as the manifest content. Freud called attention to the specific features of this form of thought. A single image may combine memory residues from different epochs in the dreamer's life (condensation). Affective residues may be displaced from its source of origin onto a neutral source (displacement).

Timelessness and the co-existence of opposites are also characteristic of this mode of thought.

5. To bridge the gap between dream image and waking reality the dreamer has to be helped to recover the emotional context that shaped the dream. Freud relied on the technique of free association to accomplish this.

Jung, in his break with Freud, broke through the narrow motivational constraints of sexuality and wish-fulfillment that Freud imposed upon the dream. Where Freud attempted to work out a scientific theory about dreaming rooted in energy, tension and release, Jung was more responsive to a broader motivational base of the dream. In contrast to Freud who viewed the manifest content as a defensive maneuver set up through censorship and disguise to prevent forbidden impulses from nakedly erupting and disturbing sleep, Jung saw in the manifest, a candid depiction of the current predicament of the dreamer. The dream was essentially a self-confrontational and self-reparative attempt to call attention to aspects of the self not yet acknowledged consciously. The dream thus served a compensatory function. If the steam kettle, allowing water to escape in the different form of steam when things got too hot, is an apt metaphor for the Freudian view, then the way the dream reveals the dark side of the moon otherwise invisible to us is a metaphor for the Jungian view.

A number of trends are discernible in the current thinking about dreams. At one extreme is the view that eschews all theory and casts dreams in a phenomenological mode (Boss, 1958, 1977). Dreams are nothing more than what they present themselves to be — the state of Being under the conditions of sleep. They are not to be decoded, interpreted or translated in any way. They depict a more primitive but equally valid portrayal of the waking existence of the dreamer. Within the Freudian camp itself there has been a tempering of the instinctual origins of the dream and a lessened emphasis on repressed childhood wishes in favor of a greater role of the ego and more respect for what the manifest content has to say about the dreamer (Erikson, 1954). Others, while still within the mainstream of psychoanalytic thought, have viewed the dream as depicting the striving of the dreamer toward a more adaptive resolution of tensional states serving an integrative rather than a defensive function (Fosshage, 1983).<sup>1</sup>

There has recently been a resurgence of interest in Jung's view, especially his more positive approach to the healing function of dreams and to the creative quality of dream imagery. He was sensitive to the openness and honesty in the way the dream spoke to and of the dreamer. He described a dreams as,

So flower-like is it in its candor and veracity that it makes us blush for the deceitfulness of our lives.

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<sup>1</sup>For an excellent discussion of the various approaches to the clinical use of dreams, see Fosshage and Loew (1987).

This sentiment is echoed in the writings of Charles Rycroft (1979) who saw in the dream the persistence of the wonder and innocence, so characteristic of the child's early contact with the world. When the capacity for abstraction and language takes over, we become once removed from direct contact with the world. Expediency and dissimulation enter the picture clouding over the expression of that innocence in waking life. Never lost, it surfaces in our dreams.

I count myself among those who have broken more completely with the classical tradition. I view dreaming consciousness as a natural healing mechanism confronting us with information about the personal and social realities that have shaped our lives. Bonime (1962) took a major step in this direction in his clinical description of the way feelings surfacing in a dream were transformed into metaphorical imagery depicting dysfunctional aspects of current personal and social values, *e.g.* competitiveness.

### Dreaming Consciousness

The REM stage of sleep, where dreaming most characteristically occurs, is driven by phylogenetically older subcortical brain mechanisms. We share the physiological concomitants of this stage with other mammals and to some extent with submammalian species. There is indirect and suggestive evidence (Morrison, 1983) that to some extent we also share an imaging capacity with other mammals.<sup>2</sup> In the latter instance, whatever imagery might accompany the REM-state would presumably lack the abstract symbolic quality of our own dreams and would be more like the literal recall of past experience. Whatever evolved function REM sleep came to serve for our own species it seems reasonable to assume it may have served a sentinel function for animals living in the wild and vulnerable to physical danger during prolonged immobility associated with sleep (Ullman, 1961; Snyder, 1966).<sup>3</sup> In the wake of the rapid expansion of the REM-sleep studies in both animals and humans it soon became apparent that no single functional explanation would fit the varied findings associated with the REM state.<sup>4</sup> The depth of sleep occurring during this state, the associated atonia of bodily musculature, the general insensitivity to external stimuli all mitigated against a sole emphasis on responsiveness

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<sup>2</sup>As suggestive evidence that cats can dream, Morrison (1983) observed that when the characteristic atonia during REM sleep is eliminated by damage to a small part of the pons, cats can walk and appear to be looking around and searching without awakening.

<sup>3</sup>Head (1926), in his classic volume on aphasia, used the term "vigilance" to depict the general state of readiness that characterized the function of the central nervous system. Liddell (1950) defined the nervous system based on animal studies. He cast the system in two roles: "In its role as sentinel it constantly asks, 'What is it?' .... In its role as planner the nervous system must ask, 'What happens next?'" (pp. 188-190)

<sup>4</sup>Prior to the REM era the psychiatrist/anthropologist W. H. R. Rivers (1923), taking issue with Freud's emphasis on the dream as the guardian of sleep, proposed "that the primary function of the dream is to awaken an animal and adapt it to the appropriate form of reaction to danger" (p. 186). The dream can act as an awakener or guardian of sleep "according to the nature of the stimulus by which the dream has been produced" (p. 187). It is this link to danger that results in "an ultimate relation between the dream and the instinct of self-preservation." (p. 188)

to external danger. Tolaas (1978), addressing these issues, offered a bi-directional view of vigilance operations during REM sleep linking them not only to a concern with future potential environmental events, but to the consolidation of recent learning as well, thus serving a preparatory function for future contingencies. The survival value of accessing memory stores and the opportunity to review the organism's behavioral repertoire in the light of recent experience have been further developed by Evans (1983) and Winson (1986).

When we go to sleep at night our concerns are a bit more complicated than our nearest neighbors in the animal kingdom. We face the complex social world we have created for ourselves, a world that has both a cushioning effect but also presents us with its own array of danger, different from the predatory danger that confronts other animals but no less real. Phylogeny has provided us with a ready-made mechanism for confronting ourselves with exigencies of this kind. A shift occurs from a state of physical vigilance focusing on predatory danger to social vigilance in response to tensions arising out of our daily experience. The result is the unique form of consciousness known as dreaming.

### **The Form of Dreaming Consciousness**

In waking consciousness afferent stimuli are processed both subcortically through collaterals and cortically, providing a circuitry that mediates the level of arousal in relation to the significance of the stimuli commanding our attention. Perceptual experience is elaborated conceptually preparing the way for whatever behavioral response may be indicated. That response is stimulated by and oriented to our existence as an active agent in the world about us. There is a qualitative and drastic shift in the nature of our existence once we relinquish that agency and succumb to sleep. Under these very different circumstances we are involuntarily subjected to the periodic bouts of arousal associated with dreaming. In this state, imagery largely displaces language. Although no final answers are in yet as to how and why this is done, what we do know about the neurophysiology of conscious states may provide a hint. Sensory deprivation studies indicate that our ability to sustain waking consciousness is contingent on a continuous supply of afferent stimuli, most of which we are unaware of. Under conditions of sustained deafferentation, consciousness begins to yield to a more imagistic form. With the loss of stimuli from the outside, we go about creating a supply of imagery from within. This seems to be the situation when we functionally deafferent ourselves<sup>5</sup> on going to sleep and then experience bouts of cortical arousal associated with the appearance of imagery. Dreaming is basically a sensory experience, predominantly visual but capable of recruiting other sensory modalities.

If we continue the analogy to waking consciousness, these self-created stimuli are then subjected to an unconscious evaluative process. They are assessed

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<sup>5</sup>The disconnect from outside stimuli is not absolute. A mother, for example, can sleep through extraneous noises, but awakens immediately at the slightest whimper of her infant.

with regard to their significance which in turn determines the appropriate level of arousal and behavioral response. In the case of dreaming, the response is an internal one involving a possible change of state. When the feelings evoked by the imagery are intense enough, full awakening occurs ending sleep. Below a certain level of intensity dreaming continues to the natural termination of the REM period. The intensity level at which awakening will occur will also depend on other factors, such as the relationship of the intensity level to how deeply asleep the dreamer is at the time of occurrence of the REM period. It is in this manner that a certain level of vigilance is maintained during sleep.

### The Content of Dreaming Consciousness<sup>6</sup>

As we have noted, orientation to novelty is a feature of both waking and dreaming consciousness. The significant difference is that asleep and dreaming we have temporarily suspended our connection to the supportive social context of waking life and are left to our own devices as we encounter whatever feelings are surfacing at the moment. It is as if at the onset of these bouts of arousal we are faced with the need to find the answers to three questions:

1. What still unresolved tension is becoming manifest?
2. What are the implications for my future?
3. What can I do about it?

The way we think about these questions while dreaming is qualitatively different from waking thought with regard not only to form but also to content. What is unique about the sensory imagistic representations that take shape while dreaming is the way they metaphorically<sup>7</sup> capture the felt impact of the recent tensions. The dream is, in effect, a series of moving usual metaphors, linked not by the ordinary logic of narrative discourse but by the processing of the underlying feelings at play and their evocation of connections to the past. With regard to the dream, any intrusive event that commands our attention is experienced as novel. Social vigilance is an orientation to the novel impact of recently evoked tensions signaling the recurrence of issues that have not been set to rest.<sup>8</sup> None of us grows up perfect in this world so that we remain

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<sup>6</sup>The stimuli that shape the content of the dream can originate in any of the four domains of our existence — the biological domain where stimuli arise from within or without when they impinge on the REM state, the psychological domain where recent events have opened up personal areas of vulnerability, the social domain where problem areas of society as a whole are directly implicated in personal tensions, and finally a domain with no generally agreed upon name that goes beyond the other three and touches on concerns of a more transcendental, spiritual or cosmic nature. In each of these domains, the issue involved can vary from the trivial to the terrible or anywhere in between.

In the pages that follow, the reader may, understandably, wonder why, in a paper offering a number of generalizations about dreaming consciousness, illustrative examples are lacking. The reason is that the space available would preclude the full development of the context in which the dream occurred and the associative matrix that had to be developed before the connection between dream and waking reality emerges. Illustrative material can be found in Ullman (1996).

<sup>7</sup>While other figurative modes (puns, double entendres, *etc.*) appear in dreams, the visual metaphor is the predominant one.

<sup>8</sup>For a more extended discussion of social vigilance, see Ullman (1961, 1973a).

vulnerable to developmental fault lines as well as to the impact of current social encounters.

For vigilance to successfully serve its safety function, it would have to have the ring of being realistically connected to the problematic aspects of the situation at hand. This would be just as true for us as the social creatures we are as it is for animals in the wild. Presumably such a phylogenetically ancient and enduring mechanism as the REM cycle played and continues to play an adaptive role in the survival of the individual and of the species. What evidence is there for drawing such stark conclusions about what often seems no more than the playful and imaginative indulgences we call dreams?

The evidence is inferential and derives from both a closer look at the way we engage with novelty under the conditions of sleep and the unique features of the way dreaming consciousness reflects this engagement.

The first thing to notice is that the onset of the REM stage ushers in a dramatic change of state from an antecedent one of absent or greatly diminished self-awareness to one where this involuntarily induced unique form of consciousness is experienced.<sup>9</sup> The opening scene in the dream is utterly unpredictable. It is as if we are sitting in a darkened theater when the curtain rises and we witness a stage setting we ourselves somehow created but which nevertheless appears quite strange. Clinical experience bears out the accuracy of Freud's observation that the stage manager who set the scene took his or her cue from one or more recent events, singled out because of their connections with unfinished business from the past. The rest of the drama deals with that unfinished business. How important is it? What coping mechanisms are at hand to deal with it? How will it be resolved? The specific content of the dream consists of imagery that metaphorically reflects the relevant life experiences, past and present, associated with the issue at hand.

The involuntary nature of the encounter, the surprise and the strangeness of the sight we are encountering, the tensions associated with the imagery, all make for the intrusive, attention-focussing aspect of novelty. Our attention is directed to a spectacle over which we have no control. The decision facing the dreamer at this time is one that highlights the issue of vigilance more starkly than for any response we are called upon to make while awake.<sup>10</sup> It is a decision that may involve a radical change of state, namely, terminating the involuntarily imposed state of sleep and returning to the sense of voluntary control associated with waking consciousness.

If a vigilance operation is to reliably orient the dreamer to the nature of his or her predicament, pleasant, unpleasant or neutral as the case may be, there

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<sup>9</sup>The onset of dreaming is heralded by the involuntary appearance of imagery. As the dream progresses, "voluntary" elements, *i.e.* the dreamer's sense of himself in the dream, may enter the picture in an effort to respond to the predicament defined by the unfolding imagery. This occasionally can go on to the point of lucidity where there is an awareness that one is dreaming and voluntary elements take over. At this point one can shape the remaining course of the dream.

<sup>10</sup>Awake, our level of awareness may vary from sharply focussed alertness to drifting off into day dreams. There is never as sharp a transition as when a dream suddenly arouses us from sleep.



are three unique features of dreaming consciousness well suited to the task. There is general acceptance of the first two features. The third divides dream workers into two camps. Does the dream reveal or conceal?

1. Dreams are concerned with the immediacy of the predicament. In the absence of the usual exposure to external stimuli, the starting point of the dream is the memory of the most recent feeling residues. The tensions they summon define the predicament that has to be investigated. The soldier on guard duty hears a rustle in the bushes. Friend or foe?
2. The investigation begins with the feeling tones associated with the recent event (or events). This is the clue which leads to the exploration of the past. Happenings in the past are culled from our remote memory on the basis of their emotional contiguity with the more recent residues, thus providing more information about the issue involved and its origin. This is quite remarkable when one considers that awake this is not an easy thing to do. It occurs spontaneously and effortlessly while dreaming. The soldier investigates the source of the disturbance.
3. For the soldier protecting an encampment, a lot hinges on his ability to realistically appraise whatever caught his attention. So it is with the dreamer. The dreamer's task is to penetrate to the truth and depth of what is occurring. He or she has to go wherever that truth leads regardless of how painful it may be. That quality of honesty is what makes for the healing potential of dream work. Without it there would be no significant difference therapeutically between dreaming consciousness and waking consciousness.

### **Honesty in Dreams**

The nature and significance of this honesty requires a closer look. The picture of the self that emerges in the dream is one that depicts who we really are in relation to the issue at hand, not who we would like to think we are or whom we would like others to think we are. Our dreams reveal the felt reality of our lives by cutting through the various ways we have managed not to see aspects of that reality. This includes the good as well as the bad that has been kept out of our field of vision. It does not mean we are angelic in our dream, but rather that the artifices that have covered over aspects of the self are shown up for what they are, devices that limit the full expression of the self.

As I indicated, the first two features of dreaming present no problem to those operating within or without the classical canon. Both accept the honesty but deal with it in very different ways. For those within that canon, the honesty lies in the way the dream concerns itself with the hidden and forbidden impulses still operative. The emphasis, however, is on the dishonesty, the way those impulses are censored and disguised. Those outside the canon see the dream as a profoundly honest metaphorical presentation of the self. Poets and

writers caught on to this quality of honesty in our dreams much earlier. Emerson, in one of his essays (1947), wrote:

Dreams have a poetic integrity and truth. The limbo and dust-hole of thought is presided over by a certain reason, too. Their extravagance from nature is yet within a higher nature. They seem to us to suggest an abundance of thought not familiar to the waking experience. They pique us by independence of us, yet we know ourselves in this mad crowd, and owe to dreams a kind of divination and wisdom. (p. 246)

How does the quality of honesty enter the equation and fit into the notion of social vigilance?

Self-awareness and language have been essential to our evolution as a social species. We have paid a heavy price for these gifts. We have become far more adept than our less endowed mammalian relatives in our capacity for self-deception, a failing that often leaves us with distorted notions of our connection to natural and social reality. To the extent this is so, we remain vulnerable to the unintended consequences of our actions. Areas of disconnection with our past leave us disconnected to aspects of our current behavior.

When it comes to dreaming we are retreading our genetically endowed REM state in a creatively imaginative way, putting it to use to alert us to where and how our waking consciousness is managing not to see something that is there to be seen. In our dreams we seem to have a built-in self-protective radar system, a socially vigilant system alerting us to the pitfalls of waking existence. Dreaming consciousness is an antidote to our self-deceptive potential.

I have referred to the dream as creatively imaginative. Far from being a regressive form of consciousness we put our imaginations to use to construct imagery that speaks so directly, so specifically and with such originality to aspects of our subjective life surfacing at the moment. We are metaphor-making animals and in our dreams images carrying a metaphorical valence move about, the stage driven by an internal and consistent logic of their own. This seems to me to be a highly creative undertaking, regardless of whether or not we regard ourselves as creative while awake. A high level of abstract thought goes into the selection of the images in contrast to the presumably more photographic recall of other animals.

### **The Ethical Aperture**

The REM state and the associated episodes of dreaming are anything but a phylogenetic atrophic remnant. By exposing predicaments arising defensively out of expediency or simply out of ignorance, this unique form of consciousness sounds a clear moral tone. Were we to take seriously the need to learn how to spark across the metaphorical gap between image and reality we could benefit from the truth being exposed and would find an ally in the effort to extend the range of moral freedom in the choices we are called upon to make.

Here I have to turn to moral philosophy for help. The point of view I have

found most congenial in sorting out the issues involved is that of Mary Midgley (1994). If I read her correctly, she buttresses common sense (it is in our nature to want to be more moral than otherwise) with Darwin's theory of evolution. She rejects any fatalistic view of human nature and links freedom to morality but not in any idealistic sense. Moral choice is contextual and always linked to the specific circumstances and constraints in which that choice arises. The important point is that the choice is always there whether we know it or not. The constraints arise out of our individual life history and endure to the extent they are reinforced by existing social and institutional arrangements.

I am, in effect, postulating that there is an incorruptible core of our being that makes its presence felt while dreaming, often more dependably than while awake. I have referred to it as an ethical aperture, likening it to the aperture of a camera which opens more widely in the dark (asleep and dreaming). The aperture itself cannot ensure a good picture, but if properly set it allows for the best possible picture to emerge given the circumstances under which the picture is taken. Analogously our dream enables us to discern more clearly the circumstances involved and degree of freedom we have in making a moral choice. The dream aperture automatically sets itself to provide the information needed to ferret out the most moral choice<sup>11</sup> available. It is up to us to develop the picture, to do the work necessary to become conscious of that choice. The dream itself cannot make us take it. Our dreams are not enforcers.

### **Dreams and Society**

Dreams have a range that extends beyond the individual in the sense of containing social referents as well as personal ones. The former point to unsolved tensions in society that have been internalized in one form or another. Social stereotypes appear in our dreams reflecting the impact of and response to our encounter with racism, sexism and other isms (Ullman, 1960, 1993). A particularly vivid account of how skillful propaganda can invade the unconscious domain is given in Beradt's book (1966) on dreams in the Third Reich. When failure to conform threatens the survival of the individual as it did during the Nazi era, there evolved unconscious constraints limiting the individual's degree of moral freedom. Illich (1994) touches on this point when he calls attention to the "axiomatic certainties" that can be "sickening, disorienting phenomena." Nazi Germany was an extreme example of how individuals become active players in a malignant social process. To the extent dreams, in their intrinsic honesty, reflect the personal impact of this internalization, they offer potential insight into its occurrence.

Any threat to moral freedom is ultimately a threat to enduring and collaborative ties among the constituents of a given order. We are members of a species that has survived thus far by virtue of our social attributes. If those attributes

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<sup>11</sup>This does not imply that the dream presents us with a clear-cut decision to be made at the moment, but rather, through its intrinsic honesty, it paves the way for choices to be made based on a greater depth of understanding regardless of whether the issue is trivial or disturbing.

continue to deteriorate and we fail to reverse the moral morass growing so alarmingly at a community, national and international level, we are in for a difficult time in ever unifying the human species. My point is not that dreams will save us from ultimate disaster but they can, if taken seriously enough, be one among many countervailing efforts. Einstein (1952), in a foreword to an encyclopedic work on man's engagement with myth and gods by Homer W. Smith, notes in a passage relevant to the above:

In his [Smith's] view, only if every individual strives for truth can humanity attain a happier future; the atavisms in each of us that stand in the way of a friendlier destiny can only thus be rendered ineffective. (p. IX)

### **Dream Sharing**

Dreaming is a universal experience and should be universally accessible. This is not the place to go into the details of the experiential group process I have evolved in an effort to reach out into the community with dream work (Ullman & Zimmerman, 1979; Ullman, 1996). It essentially involved creating a safe enough environment for the dreamer to feel comfortable enough to engage in the necessary exploratory work and for the group to learn how to be of help by putting questions to the dreamer that are helpful without ever being intrusive. I became convinced that dream work could be safely extended beyond the consulting room and that the basic concepts needed for effective dream work could be taught and put into practice outside of the expert-client relationship.

If I were to sum up the essential feature of this experience it is that the dream sharing group, structured to ensure safety and help at the same time, is the most natural and effective way to make room for the full metaphorical power of the dream image in waking life. In short the goal is to "socialize" the dream. The result is a felt response, often a deeply felt one. The meanings that emerge are markers on the way to this felt response. Once initiated, that response continues to reverberate in time. It has more in common with an aesthetic experience than a cognitive response.

There are aspects to this experience that have relevance to the contribution dreaming consciousness can make to an understanding of consciousness generally. We are gifted with a remarkable sensitivity to the dream life of others in a way that goes beyond the fact that we all swim in the same social sea and share so much in common. A dreamer sharing a dream is revealing a spontaneously wrought and often a very sensitive aspect of the self not yet publicly acknowledged. The recognition of this fact strikes a responsive chord in others and elicits a deeply empathic response. For the dreamer the working through of the dream in an atmosphere of trust, safety and the excitement of discovery closes a bit of the gap between past and present. Our underlying interconnect-edness feels more like reality when the field is cleared of intervening obstacles.

For all concerned, this unique level of sharing results in a palpable sense of communion.

There remains still another unique feature of dreaming consciousness to be considered.

### *Psi* and Dreaming Consciousness

Dreaming consciousness has been implicated as predisposing to *psi* effects anecdotally (L. E. Rhine, 1977), clinically (Ehrenwald, 1954; Eisenbud, 1970; Ullman, 1980)<sup>12</sup> and experimentally (Ullman, Krippner, Vaughan, 1989).<sup>13</sup> Aspects of *psi* effects correlate with social vigilance theory (Ullman, 1973a). I can best talk about this by analogy. The dream offers a view of ourselves from a different perspective, much as if that view were taken from a psychic satellite in orbit. Under those circumstances we would be provided with a more extended view of the past than is ordinarily available to us and a bit more of an inferential view of the future, with both views casting fresh light on the

<sup>12</sup>There are times in the course of psychoanalytic therapy when a good deal of emotional turmoil occurs in the relationship between patient and therapist generated either by the intensity of the transference feelings of the former (feelings arising from an earlier source in the patient's life and inappropriately directed toward the analyst) or feelings arising in the analyst that in one way or another block effective contact with the patient. These are often the circumstances associated with the occurrence of the telepathic dream. The patient presents a dream containing specific and non-inferential data about the analyst's life that he or she could not have been privy to, data that speaks to the nature of the problem. The following is an example from my practice (Ullman, 1959).

The patient, a 40-year-old clothing salesman, reported the following dream:

I'm in a hotel room. I was there with a man I represent. I was wrapping up a few of the samples that had been on exhibit and was preparing to leave. Someone gave me, or I took, a chromium soap dish. I held it in my hand and offered it to him. He took it. I was surprised. I asked him, "Are you a collector, too?" Then I sort of smirked and said knowingly, "Well, you're building a house." He blushed.

The patient was puzzled about the chromium soap dish and had no associations to it. I, however, did. A year and a half earlier, about 6 months before treatment began, I had moved into a new house, which had been built as part of a cooperative venture by a group of young architects. During the building, an extra chromium soap dish had been shipped to his house by mistake. I thought of returning it, but, in a spirit of belligerent dishonesty in reaction to the mounting costs of the house, I never bothered to. One week before the patient's dream, several of the architects came over to inspect some damage that had resulted from the house's settling unevenly. One of them spied the soap dish lying unused in the cellar and embarrassed me by calling attention to it.

The combination of the appearance in a dream of the unusual element of an unattached chromium soap dish and the role this item played in my current life suggested the possibility of a telepathic linkage. This assumption gained further support from the analysis of the dream.

<sup>13</sup>My clinical encounter with the telepathic dream led to the setting up of a sleep laboratory in 1962 at the Maimonides Medical Center in an attempt to reproduce these effects under controlled laboratory conditions. From 1962 to 1974 a series of studies were conducted in which the dreaming episodes of sleeping subjects were monitored and recorded by waking the subject at the end of each REM (rapid eye movement) period. In a typical experiment a "sender," isolated from the sleeping subject, would be focussing on a randomly selected target picture (generally a reproduction of a painting). The correlations were subjected to blind judging and evaluated statistically. For a detailed summary account of the methodology and the results obtained, see Ullman, Krippner, Vaughan (1989). Child (1985) critically evaluated the entire set of experimental studies over a twelve-year period as well as the various efforts at replication by other investigators. He concluded:

What is clear is that the tendency toward hits rather than misses cannot reasonably be ascribed to chance. There is some systematic — that is, non-random — source of anomalous resemblance of dreams to targets. (p. 1222)

present. Now supposing this satellite has paranormal cameras on board capable of providing a wider view of the present space than is ordinarily available to us (telepathy) and an extended view of the future (time) that goes considerably beyond what can be inferred (precognition).

*Psi* events often arise out of a context of close bonding<sup>14</sup> where unforeseen events impinge on that bond, in an emotionally significant way, not infrequently in a life-threatening way. It is as if there are circumstances where social vigilance transcends both time and space in determining the issue to be dreamt about.

### **Dreaming Consciousness: Tentative Thoughts about a Different Perspective**

Currently prevailing ideas arose in the main out of the way psychoanalytic theory evolved. Our heritage has been a pragmatic one. Dream interpretation became a therapeutic instrument but at the expense of superimposing various metapsychological systems on the dream as a template that blocked closer scrutiny at a phenomenological level of the unique features of the dream. The experimental studies on sleep and dreams using the REM monitoring technique corrected some of the grossly mistaken notions about dreams. Dreaming is part of a biologically controlled cycle and not a result of an uprush from the unconscious. These studies otherwise did very little to alter basic clinical orientations. Neurophysiological theories flourished (Crick, 1988; Hobson, 1988) but failed to capture the creative, metaphorical and healing potential of dreams.

What has been of interest, however, is the recent rapid growth of interest in the relevance of quantum mechanics to consciousness. Without exception, the early founders of quantum theory showed a keen interest in the larger issues posed by the strange behavior of subatomic particles. Their reflections cast new light into what had been largely philosophical inquiry into the nature of consciousness. They also seemed to offer new ways of thinking about the unique and still mysterious aspects of dreaming consciousness. For most of my professional life I have been interested in these aspects but from limited neurophysiological and psychological points of view. Thus far, I have outlined the main ideas that have come out of this perspective. In this final section I am going to recast my thinking along the lines of analogies that appear when the unique features of dreaming consciousness are mapped over some of the basic concepts of quantum mechanics.

### **Complementarity and Uncertainty**

Bohr (1961) sounded a clarion call when he wrote of the relevance of the general concept of complementarity to quantum mechanics and how it might

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<sup>14</sup>Ehrenwald (1978) regards the mother-child symbiosis as the "cradle of ESP" in the sense of being the prototype of the emotional bonding associated with the occurrence of telepathy.

apply to disciplines other than physics, including the life sciences and the mind itself:

The use of apparently contrasting attributes referring to equally important aspects of the human mind present indeed a remarkable analogy to the situation in atomic physics, where complementary phenomena for their definition require different elementary concepts. (p. 77)

This was a notion further developed by Heisenberg (1958) and especially by Pauli (1955). Jahn and Dunne (1987) have carried these seminal thoughts further by a closer study of the analogies that would be drawn between the principles of quantum mechanics and certain features of consciousness. With regard to complementarity, for example, they call attention to the way such dualities as reasoning/intuition, analysis/synthesis, doing/being might in some meaningful metaphorical way be viewed as corresponding to the wave/particle duality. They also regarded such features as constrained by the uncertainty principle:

In various pairs these states embody the same state of mutual uncertainty or trade-off in precision of specification as do conjugate physical properties. (p. 267)

Analogies along these lines have not yet been drawn to the dual nature of consciousness itself. Here we have two qualitatively different states of consciousness, waking and dreaming, inter-related but qualitatively different with both, essential to an understanding of an underlying unity. In contrast to the predominantly discursive mode during wakefulness there is a shift to a predominantly imagistic mode during the REM state.

Awake we are admirably suited to cope with the complexities of the world of which we are a part. With waking consciousness as our observation post, we have reduced that complexity by way of categorizing events in time and space and arrive at a picture of the world in its discreteness and patterning. This is a consequence arising out of the framework we have created for being in that world, namely orientation to time, space, causality, and a capacity for categorization. Dreaming consciousness, on the other hand, focuses on a more indeterminate and diffuse aspect of our existence, namely, the feeling tones generated while awake but not recognized for what they are at the time, existing only as background noise. We confront ourselves with a metaphorical transcription of whatever may at the moment be upsetting a given status quo.<sup>15</sup>

The feeling residues that later surface in the dream are dimly sensed in the waking state as a kind of Greek chorus registering the dissonance between a conscious response and the actual felt impact of a given experience. Asleep and dreaming there is a figure-ground reversal that takes place, highlighting

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<sup>15</sup>See Appendix.

the feelings involved. The situation is one in which two different but synergistic modes of being are each in turn suited to the state the dreamer is in. To the extent that waking consciousness and dreaming consciousness inform each other, and particularly when this is made explicit through the work done with the dream in the waking state, there is movement toward a more unified sense of a self never completely visible at any one time.

The dream/waking complementarity does not imply mutually exclusive opposites but rather the relative dominance of one distinguishable state over the other, with both making their presence felt, but in different measure and in different ways. Constrained by something analogous to the uncertainty principle, waking experience falls short of being totally in one state or the other.

### **Interconnectedness**

Here there are three strands that seem to fit together, if only by analogy. The first is the assumption that quantum connectedness applies to the universe as a whole. This view has gained support with the experimental proof of Bell's theorem and the general acceptance of non-locality as a basic feature of quantum mechanics.

A second and different approach, but pointing in the same direction, is that taken by David Bohm in his concept of the implicate and explicate orders (1980) where the former is the realm of interconnectedness, a seamless whole, the base out of which the discreteness of the manifest or explicate order arises. He likens the discreteness of macroscopic entities to that of a standing wave arising out of a fluid medium. From subatomic particles on up there is an intimate and durable relation to the implicate order that sustains them.

The focus on interconnectedness suggests that the imagistic mode of the dream is closer to Bohm's concept of the implicate order than the discursive mode of waking consciousness. The interplay of the implicate and explicate seem relevant to the kinds of transformative changes that occur in connection with dreaming (Ullman, 1987). The initial transformation takes place when what is unconscious (implicit) assumes the form of the sensorially apprehended images (explicit) that appear in the dream.

The third and final strand has to do with the way dreaming consciousness sheds light on unresolved tensions and in doing so paves the way to a deeper sense of connection to one's past and to others. Awake we are the beneficiaries of a biological adaptive mechanism that arose in connection with sleep. Once dream content became oriented to social existence in the human sense, the value of that content found its way into waking life. A prime example is the various ways primitive societies have made use of their dreams. Freud's clinical contribution to our understanding of dreams ushered in an era of public interest in the relevance of these nighttime excursions to waking life. This is particularly apparent in a dream sharing group. With waking consciousness as our observation, post-dream images lend themselves to a second transformation, as the dreamer and the group engage in the work necessary to spark



across the metaphorical gap between dream and reality. The sharing of the self at this spontaneously honest level elicits a profound empathic response and a palpable sense of communion among the participants. A good deal of what ordinarily keeps us apart (competitiveness, defensiveness, *etc.*) falls away rather quickly. It is only in the work done with a dream in the waking state that its bonding potential can be fully realized. It is as if a collective unconscious is liberated in the course of dreamwork, not in Jung's sense of the collective memories of the race and home of the archetypes, but rather as a potential for closeness, understanding and acceptance of self and others.

### **The Observer and the Observed**

The point of view taken here is that consciousness has an executive function (Stapp, 1996). As an adaptive mechanism, it is causally effective and in turn its manifestation is affected by its substrate, the brain as a quantum entity. This executive role is experienced differently awake or asleep. Awake there is an observer capable of making decisions that influence his behavior in a world he experiences as apart from himself. Something interesting occurs as a consequence of changes in our observational capacity during the REM stage of arousal. As noted earlier, the dreamer experiences himself at the onset of the dream as a member of an audience witnessing a drama about to ensue as the curtain goes up with no awareness that he himself has written the scenario. He is both separate from what constitutes his world at the time, namely, the drama about to unfold on the stage and yet, as its author, is not separate from it. Initially he is a passive observer to an unbidden intrusive event. The ordinary role of the waking observer has lost much of its executive power and is now relegated to a more reactive mode, trying to cope with the predicament he finds himself in as the dream evolves. The point I wish to make is that the observer-observed roles in the dream can in the waking state be transformed into more deeply felt connections between the inner and outer world, thus lessening the emotional distance between the self as observer and what is being observed. Two different agendas begin to merge — the waking agenda of surviving as a social being in a given society and at the same time being impelled to satisfy needs relating to the survival of the species, needs that can only be met through solidarity with others on a large enough scale, before the gap between technology and reason becomes great enough to threaten the survival of the species.

### **Non-Locality**

We do strange things with time and space while dreaming. They don't disappear from the picture, but instead are made use of for whatever metaphorical meaning they convey. With regard to time, we seem suspended in a kind of immediacy that condenses present and past and anticipates the future. That immediacy may be looked upon as a kind of subjective non-locality.

There is, however, a more extended and a more suggestive manifestation of

subjective non-locality when *psi* effects appear in dreams. Where an action or event at a distance carries an emotional valence for the dreamer, it appears to be possible to gain simultaneous awareness of that event and have it influence the course of the dream much as any ordinary day residue might. What is even more challenging is the fact that our vulnerability to the possibility of unpredictable events threatening existing emotional bonds, seems to be associated in dreaming with a scanning process that picks up non-inferential future events that pose such a danger. Non-locality seems to be a feature of the dream in the way we bring together in our dream, both actual experiences in space and time and paranormally apprehended experiences in space and time. The *psi* effects that gain access to the dream influence the course of the dream much as any ordinary day residue might. Just as in an ordinary dream the *psi* event might present in a highly symbolic way or be more literally accurate. (Ullman, 1973b)

The theoretical contributions of Jahn and Dunne (1987) to *psi* research are unique to the extent that they arise out of a long-term research program devoted to the study of anomalous phenomena (PEAR, Princeton Engineering Anomalies Research) and have led to an elaborate exploration of the metaphorical relevance of the generic features of quantum mechanics such as the wave/particle duality, complementarity, uncertainty, indistinguishability and the exclusion principle to "consciousness conjugates," some of which were referred to earlier (p. 25). Their experimental work has involved the attempt to explore the influence of consciousness on a variety of mechanical and electronic devices, and on remote viewing in which a subject attempts to describe a randomly selected scene at a distance witnessed by someone else. The model Jahn (1994) offers to account for the anomalous, seemingly non-local effects of these experiments has as one of its basic tenets the idea that consciousness has a pro-active component and that

Like physical light (energy) and elementary particles (mass), consciousness (information) enjoys a wave/particle duality which allows it to circumvent and penetrate barriers, and to resonate with other consciousnesses and with appropriate aspects of its environment. Thereby it can both acquire and insert information, both objective and subjective, from and to its resonant partners. (p. 13)

Whether or not this view of consciousness can be buttressed by a further understanding of the nature of *psi* events, Jahn and Dunne's work has had the virtue of calling attention to the challenge such events pose.

### Summary

Since what I have to say has arisen out of the social vigilance hypothesis about the origin and function of dreaming, let me restate the assumptions implicit in that hypothesis. The most important one is that dreaming consciousness is derived from a phylogenetically ancient mechanism geared to the survival of the species. The second is that this function is now carried out by the

capacity of dreaming consciousness to focus on the stresses and strains of our social existence. This in turn relates to the reality that as members of a single species, the survival of that species ultimately rests upon the realistic acceptance of this state of interconnectedness and our ability to overcome the obstacles in the way of maintaining it. The third is that our feelings which serve as the connective tissue of our social existence register the areas of personal and social disconnection, at times evoking *psi* effects to do so. Finally it is these areas that surface as the imagery of our dreams.

The REM state and the associated dreaming consciousness is a genetic imperative that shifts the emphasis from a primary focus on the individual to one oriented to the nature of the felt connections of the individual to other members of the species in the interest of survival of the species. This in turn defines the underlying polarity between waking and dreaming consciousness, with the former seeking to adapt to the demands of social reality and the latter oriented to assessing and displaying the impact of waking encounters on those organismic needs essential to the survival of the species. We bring to these encounters personal vulnerabilities that result in the tensions that surface at night as dream imagery.

In setting forth the link between dreaming and the genetic imperatives for survival, a number of unique features of dreaming consciousness fall into place. In the interest of fostering interconnectedness, the dreamer is confronted with areas of disconnects, past and present. In the enforced honesty of the confrontation lies the potential for behavioral change. Dreams have an intrinsic connection to issues of morality and freedom through the exposure of the constraints that limit both.

In addition to interconnectedness, a further analogy can be drawn between quantum concepts and the unique features of dreaming. The interplay of waking and dreaming consciousness has been likened to the principle of complementarity. Awake, the individual has to find his or her way in a world of discrete objects and a particular set of social circumstances. Asleep and temporarily circumventing this world, the dreamer participates in the more universal task of maintaining the unity of the species in the face of fragmenting and alienating aspects of social reality. Non-locality and its implications for connectedness and *psi* effects have also been posited as a feature common to dreaming and quantum mechanics.

The analogies that have been drawn are strong enough to warrant further attention to dreaming consciousness and whatever light it may have to shed on the task of bringing mind and matter closer together.

### Appendix

The occurrence of hypnagogic imagery is illustrative of the transformation from the discursive to the imagistic mode. Silberer (1951) offers a good example. On one occasion while at work at his desk, he was having considerable difficulty with a passage in a paper he was writing. Despite the changes he

kept making he couldn't get it to read as smoothly as he wished. He began to doze off. He soon awoke startled but with a clear image of himself planing the edge of a panel of wood to get it more to his liking.

Dreams tend to be **more** complexly organized narratives in which the opening scene metaphorically depicts the tension associated with recent feeling residues and the subsequent imagery registering the reverberating feelings and memories set off by that experience. In the example that follows, a tension, barely sensed while awake, registers in the dream because of its more important historical overtones. This connection comes into being through a transformation of the original image.

A woman who had the responsibility for arranging the initial meeting of a dream group, consisting of her colleagues, felt harassed by a number of problems arising as the time approached. She was aware of a vague uneasiness as to how good a job she would do in introducing her colleagues to dream work.

In the opening scene of the dream she is reaching for her tea kettle. She felt it would be too small to serve ten cups of tea (the number of participants). In a sudden shift of scene, so characteristic of dreams, she finds herself holding a much larger and more beautifully designed tea kettle. She felt relieved.

In the course of sharing the dream in the group, she became aware that something about the appearance of the larger tea kettle reminded her of one that her grandmother used. She was much closer to her grandmother than to her mother. She elaborated on the extent to which the acceptance and warmth she associated with her grandmother's home offset the low self-esteem and sense of inadequacy that colored her relationship with her mother. When, in the dream, her earlier negative feelings of inadequacy reappear (the ordinary tea kettle, her old status quo), she reignites a supportive connection to her past (the large and beautiful tea kettle, her more adult awareness of her inner resources). The fusion of the two feelings results in a transformation that offers a truer insight into her situation. She still has to perform (pour the tea, nourish others) but is better prepared to do so once this connection to her past had been made.

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