Nightmares, Neurophenomenology and the Cultural Logic of Trauma

Laurence J. Kirmayer

Division of Social & Transcultural Psychiatry, McGill University, Montreal, QC, Canada. Culture & Mental Health Research Unit, Institute of Community & Family Psychiatry, 4333 Cote Ste. Catherine Road, Montreal, QC H3T 1E4, Canada

The papers in this special section of *CMP* explore new terrain in the cultural shaping of traumatic experience. The authors describe nightmares occurring in association with trauma across diverse settings. The innovative ethnographic work presented in these papers circles around basic questions about dreams and nightmares. What kind of experiences are nightmares? To what extent does their function, form and content follow from the neurobiology of dreaming? Put another way, what accounts for the admixture of biology, personal experience and cultural content in dreams? More specifically, in the case of nightmares related to trauma, how much of their content follows from the neurophenomenology of dreaming, how much reflects specific trauma memories and experiences and how much is a result of the dreamer's imagination and interpretation operating either during the dream experience itself or on later recollection and recounting to others? Answers to these questions are crucial for any understanding of the potential links between dreams and trauma exposure and have clinical relevance for those seeking to understand and assist patients suffering from recurrent nightmares.

The Neurophenomenology of Dreams and Nightmares

Nightmares are fearful or emotionally disturbing dreams, usually recalled on awakening from REM sleep. Current nosology distinguishes between idiopathic nightmares and those that are 'posttraumatic'—attributed by the dreamer or a clinical observer to trauma exposure. This attribution is usually based on the content of the dream (which can be linked to the traumatic event) or temporal contiguity.

Certain aspects of the phenomenology of nightmares likely reflect the neurobiological processes of dreaming. Nightmares are associated with difficulties in regulating dysphoric emotions (Nielsen and Levin 2007; Phelps et al. 2008). Distressing dream imagery is stimulated by emotional events of the day and by sleep cognition. The dreamer works to regulate and reduce this distress by recontextualizing the dream imagery, constructing a story or sequence of shifting images that diminish the intensity of distress. This may involve bringing into play other dream actors or elements based on memories and experiences that recast the meaning of the negative imagery and reduce the emotional distress. When this

works, successive dreams over the course of the night become less troubling; when it fails, the sleeper may awaken with a frightening dream.

This model posits a fundamental continuity between waking cognition and emotion regulation and their counterparts during sleep and dreaming. We think, feel, react and actively situate ourselves in (imagined, virtual) social worlds when we are asleep no less than while awake. For example, efforts to suppress a thought while awake may increase the likelihood that it appears in dreams, reflecting the same ironic effects of self-control seen in waking thought (Wegner et al. 2004). However, dreaming differs from the waking state in several important ways: there is less sensory input from the outside world, less motor activity and proprioceptive feedback (during REM sleep, major muscle groups are atonic) and less self-conscious awareness (with the exception of lucid dreams). The imagery and narrative structure of dreams draw from our fund of memories and associative networks activated by recent experiences. The dream experience tends to be immersive, and we usually lack the secondary awareness that we are (only) dreaming—an awareness that often brings some relief after awakening from a frightening dream. These phenomenological features of dreams follow directly from the physiology of the REM state and are reflected in the pattern and process of dream mentation (Muzur et al. 2002).

In his article for this issue, Jacobson frames his work on dreaming in Puerto Rico as a “person-centered ethnographic study of altered states of consciousness (ASCs) and supernaturalism.” Labeling dreaming as an ASC serves to emphasize its differences from other modes of experience in terms of phenomenology (the quality of dream experience), the putative psychophysiological processes involved in generating dreams, its epistemology (in the sense of both what can be known by others of the dreamer’s experience and the sort of knowledge that dreams may bring) and a corresponding ontology (Are dreams a voyage to the underworld, a vision of the future, a struggle with one’s own personal shadow or simply stories conjured out of meaningless neural noise?).

The notion that consciousness is altered in dreaming seems straightforward, but grouping highly disparate phenomena together as ‘ASCs’ and placing different modes of consciousness on a continuum from waking to sleeping/dreaming involve more questionable assumptions. The observed continuity between waking and dreaming mentation, discussed above, is not the same as the assumption of a continuum of ‘states of consciousness.’ What could a ‘continuum’ of ASCs mean in this context? There are at least three distinct possibilities: (i) ASCs represent actual gradations of some central nervous system process (like level of physiological activation); (ii) ASCs are related to some prototypical state of waking consciousness based on an experiential dimension (e.g., level of subjective arousal from drowsy to wide awake) or (iii) ASCs constitute a set of disparate modes of functioning held together by family resemblances involving many different (perhaps unrelated) features. In this last case, we would expect wide cultural variation in what counts as (the local equivalent of) an ASC.

Although neurologists have used the notion of levels of consciousness in grading stupor and coma (Plum and Posner 1980), and psychologists have described a continuum of levels of arousal regulated by the brain stem reticular activating system (Hebb 1955), the current

consensus is that these reflect different modes of information processing that are not on a single continuum but involve multiple processes that can be differently configured and affected by pathological conditions (Jones 2003).

Similarly, the older literature on ASCs discussed ‘depth’ of hypnosis, which implied a continuum (and even, misleadingly, used the metaphor of sleep as in the hypnotist’s injunction, “You will sleep deeply!”), but this has given way to an understanding of hypnotic performance in terms of multiple attentional systems that can be recruited to perform specific tasks (Raz 2005). Individuals differ in their abilities to mobilize these systems and in the degree to which they are dissociable (instructional set and environmental setting also play crucial roles), but a single continuum of level or depth of hypnosis is not adequate to capture the complexity of the scripted performances of hypnosis.

The links between hypnosis, sleep and dreaming are not totally a matter of misleading metaphors. The notion of thin or permeable boundaries has been suggested as one personality trait related to nightmares (Hartmann 1991; Pietrowsky and Köthe 2003). This, in turn, may be related to openness to absorbing experiences, tendency for dissociative experiences, fantasy proneness and hypnotizability (Belicki and Belicki 1986; Levin and Fireman 2001; Nielsen and Levin 2007). People who are highly hypnotizable can readily fall back into their dream imagery, becoming deeply absorbed and experiencing it as vivid, disturbing and even actively changing through its own, apparently independent agency. This capacity for ‘waking dreams’ is used in the Jungian therapeutic technique of active imagination (Watkins 1976).

Consistent with the neurology of impairments of attention and arousal, and the study of hypnosis, current neurobiology would suggest that dreaming is not simply on a continuum with waking but reflects distinctive processes. Thus, for example, hypnopompic and hypnagogic sensations, imagery and hallucinations all may give rise to compelling experiences for specific reasons related to their neurobiology. Just as with the example of sleep paralysis (Hinton et al. 2005), our appreciation of the detailed neurobiology of dreaming will help us understand some of the distinctive phenomenology that cuts across cultures and that can be elicited by appropriate questioning of individuals even when there is no cultural model to make the experiences salient.

It remains unclear, however, how much of this distinctive phenomenology has been uncovered in the studies in this issue of *CMP*. This is so because reports of dreams are never neutral accounts of pure phenomenology but always reflect their contexts of recollection and reporting. So it is difficult to disentangle the cultural models that come into play both during dreaming and, especially, in subsequent recounting to others, whether they are part of the dreamer’s family or entourage, a visiting ethnographic researcher intent on collecting rich material or a concerned clinician trying to identify symptoms and signs of illness and targets for intervention.

For example, summarizing the types of nightmares reported by his informants, Jacobson writes: “In general, these distressing dreams appeared to follow either of the two REM-dream templates discussed above (chase-anxiety or loss-grief), with the additional

incorporation of traumatic autobiographic details and, often ... a reference to these as being 'like memories.'” Is the reference to these experiences as “being like memories” a phenomenological description, a metaphor to convey something about their sensory or affective qualities or a warrant of their veridicality and personal importance? This uncertainty leads us directly to the epistemological problem of relating nightmares to trauma.

Nightmares as a Feature of Trauma Response

Nightmares are a recognized symptom of PTSD, related to conscious intrusions, but they do not always appear in association with PTSD (Nielsen and Levin 2007). Posttraumatic nightmares can occur in the absence of PTSD, and the majority of nightmares are not directly related to traumatic events. Indeed, many nightmares reflect existential fears (like the possibility of one's own social humiliation, disgrace, disfigurement or death) and might be better termed “pretraumatic”—in that they anticipate the traumas of everyday life. Individuals who suffer from frequent nightmares may anticipate catastrophes and suffer not from PTSD but from *pretraumatic stress disorder*.¹ Nightmares seem most clearly linked to trauma when they contain images that explicitly replay the original traumatic event. Often, however, the link with trauma is an attribution made after the fact. Even if the dream does not contain recognizable elements of the traumatic event, it may be attributed to the trauma through symbolic analogies or associations. Of course, this attribution does not prove causality.

The literature on PTSD makes a distinction between (i) nightmares as “bad dreams”—an evaluation that may occur both within the dream experience and after the fact, and that can change with subsequent retelling and re-evaluation (Indeed, this reframing through interpretation is one function of dream interpretation in psychotherapy.)—and (ii) nightmares as more or less automatic repetitions of a traumatic experience (Phelps et al. 2008). While the former may be evidence of the adaptive and creative functions of dreaming, the latter are presumed to be pathological, symptoms of a disorder in which the normal adaptive functions of dreaming have broken down.

Sporadic nightmares are common and at least two to six percent of the general population report weekly nightmares (Nielsen and Levin 2007). Nightmares are more frequent when individuals experience increased daily stress or emotional arousal, but the content of nightmares may not directly reflect the specific types of stress—indeed, nightmare images may be horrifying even when the stresses experienced are more mundane. Frightening dreams of terror, injury or loss need no real event as their basis. Imagined deaths of others rather than memories of actual deaths are sufficient to cause intense emotion, with the dreamer awakening in tears or sobs of grief. What is more, dreams and intrusive images that have the quality of reliving or replaying may not be veridical but, rather, represent ‘worst-case scenarios,’ vividly (re)imagined as part of a process of thinking about the catastrophic experience (McNally 2004).

¹The phrase and the insight are thanks to Elizabeth Anthony (personal communication, March 18, 2009).

As Hinton and colleagues note, “The nightmare may recall a trauma owing to its content, emotion, cognitive appraisal and somatic symptoms.” These different modes of linkage may include a cognitive-conceptual or self-conscious association, but they may also reflect other nonconscious processes that link these levels of processing, such as emotional conditioning, bodily habitus, priming or activation of specific semantic or attentional networks. These associations, however, can work bidirectionally, with trauma evoking nightmares and nightmares leading to increased thoughts about trauma. For example, through affective state-dependent memory, fear itself may evoke memories of trauma, but it may also lead to newly imagined scenes of past catastrophes.

In general, therefore, for any given nightmare, it is difficult to determine whether it was generated by trauma recall or occurred for other reasons and then resulted in trauma recall during or after the fact. Further, it is equally difficult to determine what is accurate recall and what imaginative reconstruction. This difficulty reflects the ubiquity of looping effects in which recall leads to interpretation and elaboration of a memory, which, in turn, lead to further recall and elaboration. Our interpretations of memories become incorporated into the memories themselves in ways that may be seamless and leave us no prospect of unraveling the cyclical processes of remembering, imagining and retelling.

In thinking about nightmares, it is natural to link painful themes to specific experiences, but these links in narration need not reflect any fundamental causal mechanism, only the coherence of narrative itself. The temporal causality between traumatic event and nightmare response then may flow backward—as Young (2007) has described for PTSD-related memories more generally. Attributions of dreams to trauma may work retrodictively, in the moment of either retelling or re-experiencing, and thenceforth become integrated into future recollection.

There is another interesting prospective role for dreaming in the dynamics of PTSD. If dreaming plays a role in memory reconsolidation, then it may be particularly important in the processes that maintain PTSD. The recollection and reconsolidation of memories may be important for the persistence of anxiety associated with traumatic memories. Self-perpetuating loops of dream-anxiety-catastrophizing-panic, as described by Hinton and colleagues, may contribute directly both to recurrent nightmares and to persistent symptoms of PTSD. Blocking the intense emotional arousal associated with traumatic recollection (e.g., by giving individuals the β -adrenergic blocking agent propranolol while they are recalling a traumatic experience) may lead to the memory’s being re-stored with less intense emotion (Brunet et al. 2008). Subsequent recall will therefore be less distressing, thus reducing the symptoms of PTSD. Dreaming may provide an opportunity for a similar process to take place more spontaneously. Cultural attitudes toward dreaming, the uses made of trauma-related nightmares and the meanings attached to their contents may have helpful or negative effects on trauma adaptation through their effects on waking cognition, emotion regulation and social position as well as their influence on the individual’s subsequent dream experiences.

Imagination, Interpretation and the Social Life of Nightmares

Dream life is given cultural meaning as dream stories are told to others or mulled over by the individual. Even where there is no explicit talk of nightmares, because such revelations are private or dangerous, cultural forms and modes of interpretation influence private experience through cognitive schemas, modes of soliloquy and efforts to manage experience in ways that reflect social models, norms and expectations. Ways of narrating dreams locate them in alternate narratives of the self that may divert attention from trauma or demand that traumatic events be recognized as central to the individual's predicament.

Grayman, Good and Good note that experiences may be similar across cultures (in their outline or at a certain level of abstraction) while being differently marked (or unmarked) and interpreted. Some dreams are nightmares from the start—they involve terrifying or deeply disturbing images or feelings of dread or anguish. But nightmares can become just dreams, as the immediacy of feeling subsides and they are reinterpreted. Contrariwise, a dream may become a nightmare only upon recollection, when aspects of its imagery are reinterpreted and experienced as terrifying.

Ultimately, then, the notion of a nightmare as a 'bad' dream is not entirely intrinsic to the phenomenology of the dream, but depends on the meanings attached to it. Do the dreams threaten to lead individuals astray from religious duties, or confront them with memories they do not wish to recall? As Grayman and colleagues illustrate, even painful memories of trauma and loss may have a positive valence if the person views the dream as a meaningful encounter, recollection or opportunity for reconnection with the spirits of loved ones, or for some other culturally salient value like personal growth or transformation. As is common in some North American contexts.

The special status of dreams as events that provide an impressive and compelling experience for the dreamer, and for others who share an ontology that privileges the message of the dream, may result in a particular form of social capital. But the social uses of dreams and nightmares vary widely across cultures. Thus, we are told by Grayman, Good and Good that, in Aceh, people rarely talk about dreams because, whether their meaning is positive or negative, dreams may bear truths for the dreamer that are best kept secret. What is secret (or what remains part of the unspoken traffic of the night) nevertheless may play an active role in social life through its effects on the dreamer's mood, thought and action. Unspoken dreams may also have power as hidden knowledge that others can only guess about or intuit.

The social life of dreams is part of a larger ontology and moral economy. Across cultures, dreams are widely held to contain significant meaning, and popular interpretations influence everyday attitudes and actions (Morewedge and Norton 2009). As Jacobson illustrates, cultural expectations shape dream experiences so that those who are Evangelical Christian may experience dreams in terms of demonic influences, while Spiritualist Christians may have more positive or mixed views. Buddhists, in turn, may understand nightmares in general as projections of the mind deluded by its own passion, aggression and ignorance. Each of these traditions opens onto a cultural phenomenology of how beliefs about dream ontology are generated and sustained, with corresponding interpretive strategies of how to

read their meaning and personal and social dynamics through which they take on strong emotional valences and imperatives for action.

The impact of dreams does not end with their interpretation. In their contribution, Hinton and colleagues describe how a variety of Cambodian rituals undertaken to protect one against the effects of nightmares and prevent their recurrence are based on a model of ontological security that sees the self as being organized in concentric spheres. This idea, strongly reminiscent or reflective of Buddhist notions of the mandala as a map of the Self, connects everyday body practices with dream experiences. The links between embodiment and enactment may be through the capacity of body rituals and expectations to contribute to emotion regulation, thus diminishing the emotional arousal that contributes to frightening dreams. Interestingly, practicing protective rituals may sometimes aggravate fears—perhaps because it reinforces the individual's investment in an underlying ontology that views the self as being always vulnerable to malign forces and imbalances. Understanding the ways in which ritual shapes emotional experience—both in waking life and in dreams—will clarify what makes specific rituals more or less helpful and may suggest novel therapeutic interventions and strategies for intercultural work.

Conclusion: The Uses of Nightmares

The complexity of dreaming suggests that dreams do not have a fixed or determinate meaning, but they can be used as meaning generators—configurations of images, memories and symbols dredged up from the individual's experience that are emotionally charged, resonant or salient in other ways. Nightmares are a subset of dreams marked off by their frightening or distressing quality. Diagnostically, it is difficult to classify nightmares into trauma-related and unrelated categories, since personality, context and interpretive biases all shape dream experience and recall (Nielsen and Levin 2007). Neither specific content, vividness nor physiological reactivity is a reliable guide to the traumatic origins of nightmares (McNally 2004; Rhudy et al. 2008).

How, then, can we understand the links between nightmares and trauma? If, following Wittgenstein, we seek meaning in use, then trauma, dreams and nightmares all have many social uses. The interpretation of dreams reflects a culturally based ontology (what is out there) and value system (what is important, acceptable, frightening, dangerous or forbidden to talk about). These modes of interpretation are regulated by social practices, but like individuals' conflicts over desire, dreams may also express what is culturally ambivalent or disallowed. The dream thus speaks to the social world from the perspective of the individual's experience of the personally, socially and political disavowed or denied. And the social world speaks back, through the dreamer's vocabulary of images, narrative structures and culturally shaped emotional responses, as well as through the ways in which others attend to the dreamer's account. The path from trauma to nightmare may begin within the confines of the human skull but it traverses the social worlds that give our dreams political power and import.

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