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Reflective Awareness in Dreams Following Loss and Trauma

by

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DEDICATION

To my beloved mother and in memory of my father and grandmother in heaven

ABSTRACT

The objectives of this study were to explore (a) the relationships between dream reflective awareness and different types of impactful dreams, (b) the relationships between waking reflective awareness and dream reflective awareness following loss and trauma, and (c) the self-transformative potential of reflective awareness within dreams. We conducted a 2 (loss/trauma experiences) X 3 (timeframe: within the preceding 6 months, within the preceding 6-24 months, within the preceding 3-7 years) cross-sectional study to examine reflective awareness within impactful dreams and the changes in subsequent waking reflective awareness. The major results suggested that (a) only transcendent dreams were highly related to explicit dream lucidity (i.e., lucid mindfulness); (b) a continuity between pre-dream waking mindfulness and intra-dream self-awareness was specific to mundane dreams; (c) the experiences of loss or trauma and the timeframe of such experiences both predicted depersonalization within dreams; and (d) depersonalization within dreams was predictive of subsequent decreases in waking mindfulness. In sum, the present study replicated prior studies of the self-transformative effects of impactful dreams, demonstrated the continuity between dreaming and waking reflective awareness, and clarified the ways in which reflective awareness within dreams may affect post-traumatic growth.

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CHAPTER Ⅰ

INTRODUCTION

Reflective Awareness and Its Role in Transpersonal Psychology

In contrast to the reductionism of psychoanalysis and behaviorism in understanding human nature, transpersonal psychology has arisen as the fourth force of Western psychology (Lefebvre, 1992; Maslow, 1968, 1969a; Walsh, 1983) after humanistic psychology's theories on human development were well-recognized. Taking a step further beyond humanistic psychology, transpersonal psychology emphasizes the spiritual level of human nature and its transcendental potentiality.

One of the major pioneers in transpersonal psychology was Abraham Maslow, although contemporary psychology tends to neglect his contributions in this area. According to his "Theory Z" (Maslow, 1969b), transcendental and spiritual needs are included as a modification of his early theory of needs hierarchy for understanding motivation and personality (i.e., Maslow, 1954). Another important figure in this area is Roberto Assagioli, whose theory of psychosynthesis articulates different states of consciousness, the difference between one's ordinary self and true Self (i.e., the spiritual dimension of self), and for the place of transpersonal potential in human nature (i.e., Assagioli, 1965, 1974).

More specifically, Figure 1 is a diagram that depicts the relationships between different states of consciousness and the Self (Assagioli, 1973, 1991). According to Assagioli's theory, beyond the realm of consciousness there are still the lower unconsciousness, the middle unconsciousness, the higher unconsciousness (the superconsciousness), and the collective unconsciousness. In comparison with the constant essence of the true Self, the self-awareness of the conscious "I" is merely an incomplete reflection of that spiritual Self. By cultivating the ultimate existential meaning or practicing spiritual teachings, one's center of consciousness—the self-conscious "I"—can approach the upper levels of consciousness until the sphere of the superconscious is reached. This is also the

way to attain an enduring transpersonal state. In other words, one of the important components of his theory starts from the recognition of one's own ongoing thoughts, feeling, desires, etc, as well as one's own body, social roles, and so on, as things that he or she owns, but not equal to the center of such awareness. This recognition (i.e., dis-identification) is particularly important for reaching the higher state of consciousness and living the true Self.

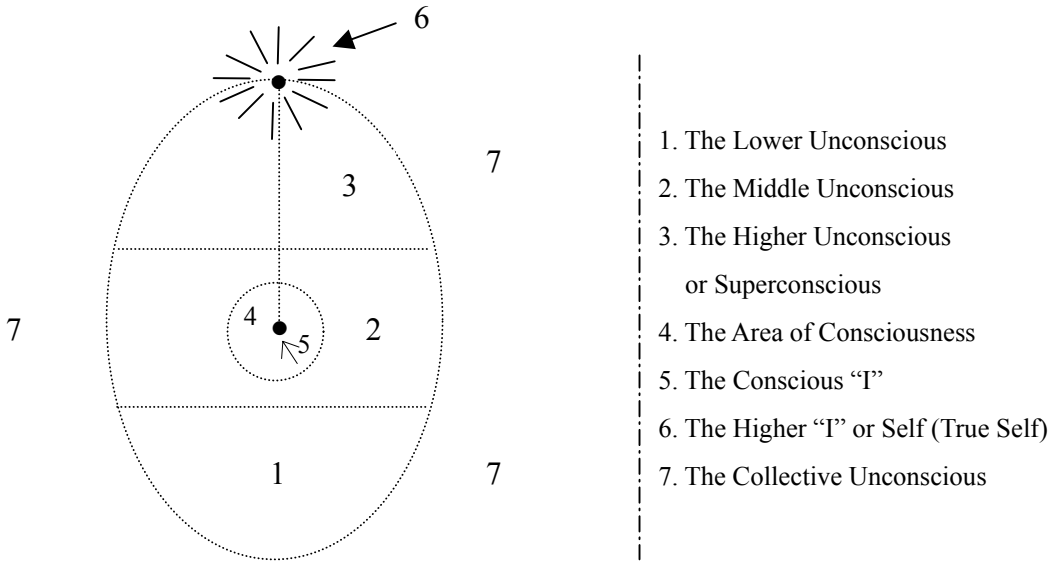

Figure 1. The diagram of psychosynthesis (Assagioli, 1991).

The concepts of self-transcendence and true Self were also suggested by other scholars, although different vocabularies were used (e.g., Deikman, 1982; Frankl, 1969; Jung, 1933; Lilly, 1977; Rogers, 1980; Tart, 1975). For Eastern psychology, the pursuit of self-transcendence also has a long and well-documented history (Hall & Lindzey, 1978; Kornfield, 2008; Lefebvre, 1992; Mikulas, 2007; Rinzler & Gordon, 1980; Taylor, 1988; Walsh, 1999; Welwood, 1996, 2000), for example, in Buddhism and Taoism. Based on his persistent

efforts to integrate Western and Eastern psychology, Wilber (1977, 1979) suggested that consciousness develops in a hierarchical order through the continual processes of identifying with the current structure of consciousness, incorporating but dis-identifying with the preceding (lower) level of consciousness. This process, therefore, has made it possible to "operate" on that lower structure from a higher level of consciousness. Along this transcendental path toward an ultimate integration of consciousness, the horizon of consciousness is thus gradually expanded and enriched. This concept, again, emphasizes the significance of self-reflection (or "reflective awareness," in a broader and more comprehensive sense) for self-transcendence and self-realization.

Reflective Awareness and Mindfulness

Mindfulness is a Buddhist form of spiritual discipline that is central to all branches of Buddhism. Mindfulness can be cultivated through meditation, especially the practice of Mindfulness Meditation. In a broader sense, the major meditative disciplines in the world all emphasize the cultivation of "concentration" and/or "mindfulness" to a certain degree (Ornstein, 1986). According to Mikulas (2007), the basic component of mindfulness training is "simply noticing whatever arises in consciousness while minimizing the occurrence of and getting lost in related thoughts, reactions, and elaborations." Nevertheless, our understanding of mindfulness should not be confined to the meditative techniques; it can be applied during moment-to-moment everyday life.

The concept and practice of mindfulness has been gradually integrated into contemporary Western psychology and applied to the area of psychotherapy (e.g., Shapiro & Schwartz, 2000; Welwood, 1980). There is substantial evidence that mindfulness training is associated with reduction of physical symptoms, successful treatment of psychological disorders (e.g., anxiety, depression, etc.), psychological well-being, and spiritual growth (Alexander, Langer, Newman, Chandler, & Davies, 1989; Astin, 1997; Barnhofer et al., 2009; Brown & Ryan,

2003; Brown, Ryan, & Creswell, 2007; Carlson, Speca, Faris, & Patel, 2007; Foley, Baillie, Huxter, Price, & Sinclair, 2010; Kabat-Zinn et al., 1992; Kuyken et al., 2008; Miller, Fletcher, & Kabat-Zinn, 1995; Reibel, Greeson, Brainard, & Rosenzweig, 2001; Shapiro, Schwartz, & Bonner, 1998; Speca, Carlson, Goodey, & Angen, 2000; Teasdale et al., 2000, 2002; Williams, Kolar, Reger, & Pearson, 2001; Witkiewitz, Marlatt, & Walker, 2005). These findings suggest that mindfulness is not only an approach to enhancing spiritual life, but also a substantial influence on psychological and physiological well-being. However, since most of these conclusions were drawn from mindfulness-based psychotherapy, the potential positive influence of mindfulness per se, and how it exerts this influence, still need further investigation.

According to Mikulas (2007), most meditative training systems introduced in Western psychology focus on the development of concentration, not mindfulness. This may be partly due to confusion about these original concepts and the fact that a well-constructed instrument for measuring mindfulness was not available in the early stages of this emerging area of mental health practice. Thus, the beneficial effects of these practices (e.g., relaxation, stress reduction, or more control over intrusive thoughts) could not be simply attributed to mindfulness. Although concentration and mindfulness should be carefully distinguished, acquiring the capacity to "quiet one's mind" and "clear a space for it" (i.e., through "concentration") has significant value and is crucial to the dis-identification with one's regular self, the subsequent attainment of mindfulness, and insight into spiritual awakening.

In addition, as indicated earlier, self-reflection is crucial for self-transcendence. However, self-reflection can be further differentiated into at least two distinct but interrelated forms. In one form of self-reflection, the individual may start to recognize consciously the mental content of his/her own awareness (e.g., by reflecting on his/her thoughts, feelings, perceptions, actions, or, through any cognitive understanding of him/herself). However, taking a step further, self-reflection may trigger realization of the subjectivity of awareness (i.e., reflective awareness of awareness itself). Regarding the tradition of

Transcendental Meditation (TM), it has been documented that, when awareness reaches the state that is completely detached from its own mental content and processes, it is the moment of experiencing "transcendental consciousness" (pure consciousness, self-referral consciousness). This higher state of consciousness is characterized by an unbounded, unified sense of self, underlying but beyond regular waking, sleeping, and dreaming states of consciousness. This and all other higher states of consciousness are also considered to be the experiencing of true Self, the state of "witnessing" (e.g., Alexander, Cranson, Boyer, & Orme-Johnson, 1987; Gackenbach, 1991a; Travis, 1994). In contrast to this pure, "self-referral" consciousness, the preceding form of reflective awareness (i.e., the focus of self-reflection on its mental content and processes) is termed the "object-referral" mode of self-awareness, although object-referral and self-referral can be regarded as two ends of a continuum of self-awareness (i.e., Travis, Arenander, & DuBois, 2004). Empirical research on long-term TM practice has indicated that, experiencing sustained pure, self-referral consciousness was associated with positive psychological and brain function (e.g., higher frontal EEG coherence, higher alpha and lower gamma power) (Travis & Arenander, 2006; Travis et al., 2004).

The findings with regard to the existence of a self-referral consciousness were mostly derived from research on TM. Although the goals of training emphasized by TM programs are not the same as Mindfulness Meditation, there is evidence that TM practice can also enhance levels of mindfulness (Tanner et al., 2009). In addition, TM practice also emphasizes the importance of dis-identification in self-transcendence, although a slightly different concept (i.e., de-embedding) is used. Thus, these findings, especially the evidence of physiological correlates of the persistent existence of a higher state of consciousness across different waking and sleeping stages, have shed light on the possibility of developing self-transcendent human potential.

For Tibetan Buddhism, similar perspectives regarding the continuity of reflective awareness across waking and dreaming states are also suggested. More specifically, according to its spiritual discipline, the enhancement of awareness in

waking life may express itself in the same way during dreams. Correspondingly, the cultivation of reflective awareness within the dream (i.e., the practice of dream yoga) has been considered critical for spiritual awakening, as well as for attaining a more lucid, transcendental state during wakefulness (by extending the self-realization and liberation of mind developed during dreaming to one's waking life) (e.g., Tulku, 2000; Wangyal, 1998).

In the present study, we hoped to examine this possibility more closely using the self-report approach to understanding subjective experiences of reflective awareness, across dreaming and wakefulness. Furthermore, by investigating people with experiences of significant loss or significant trauma, we expected that this research design might sharpen the contrast among different backgrounds of distressing experiences and therefore, provide clues to the understanding of untapped areas of human potential.

Theoretical Issues and Measurement of Dream Reflective Awareness

In the past, dreaming has been portrayed as involuntary and unreflective (Foulkes, 1985; Rechtschaffen, 1978). Nevertheless, there is some evidence that a certain amount of reflective awareness may occur during dreaming. For instance, a comparative study of waking and dreaming cognition indicated that self-reflection was evident in retrospective descriptions of waking and dreaming experiences; moreover, the differences between dreaming and waking cognition seemed more quantitative than qualitative (Kahan, LaBerge, Levitan, & Zimbardo, 1997). Also, a study of self-awareness during dreaming indicated that the factors that triggered reflective awareness during wakefulness (e.g., being aware of positive and negative feelings and oddities) were also regularly evident within dreams (Kozmová & Wolman, 2006). Furthermore, studies of lucid dreaming indicate that dreamers sometimes reach a state of explicit self-reflection (e.g., becoming explicitly aware of dreaming while dreaming). While lucid, they may remember previous events, possess reasoning ability, and take volitional actions in accordance with self-directed reflection (Gackenbach, 1991b; Green & McCreery,

1994; LaBerge, 1985; LaBerge & Gackenbach, 2000).

Some research on lucid dreams has suggested that lucidity (i.e., awareness of dreaming while dreaming) and intentionality (i.e., volitional actions or dream control) are closely related processes that nonetheless need to be considered separately (Kahan, 1994; LaBerge & DeGracia, 2000; Purcell, Moffitt, & Hoffmann, 1993; Schwartz & Godwyn, 1988; Windt & Metzinger, 2007). Generally, lucidity comes earlier and may be followed by intentional action or dream control. Nevertheless, lucidity is not always accompanied by intentional action or dream control; in some cases, intentionality (especially control of one's own thoughts and feelings) exists without awareness that one is dreaming (e.g., Kahan, 1994). However, remaining tied to these particular distinctions risks oversimplification. Barrett's (1992a) study of cognitive abilities (i.e., rational thought and memory) during lucid dreaming found that "awareness of dreaming while dreaming" did not capture the diverse forms of cognition that she observed in such dreams. Moreover, dreams that seemed lucid (in some sense) seemed to occur without explicit awareness of the dreaming state. The asynchronous appearance of different aspects of cognitive abilities and dream lucidity has suggested the need for a more comprehensive approach to the study of reflective awareness in dreams. Perhaps explicit awareness of dreaming while dreaming is not an all-or-none event, but rather a special quality of dream lucidity that may be accompanied by other relevant phenomena (e.g., memory, reasoning, intentionality) that jointly appear in complex and subtle patterns.

Rossi's (1985) phenomenological theory of self-reflectiveness seems to be the only theory that attempts to capture the diversity of reflective awareness within dream experiences and its significance for self-transformation. His theory, which is conceptually grounded on Assagioli's (1965) Theory of Psychosynthesis, suggests that dream experiences may correspond to psychological development along a self-reflectiveness dimension, from ego-absent dreams to multilevel self-awareness. Self-reflection and expanding awareness during dreaming are considered necessary for psychosynthesis and integration of the self. According to

Rossi, this dimension is comprised of seven levels[1] that represent the gradual transformation of self-reflection within the dreaming experience. At the highest level, the capacity to experience multiple levels of awareness within a dream reveals that the dreamer has expanding awareness and is not confined within a unidimensional form of existence. For instance, a "self" may be engaging in an ongoing experience in the dream drama, and another "self" at a higher level of awareness may simultaneously be observing that "experiencing self." According to Rossi's theory, this level has been characterized as the fully self-reflective dream state.

Rossi's (1985) perspective provides a more comprehensive view of reflective awareness during dreaming in that he has attempted to describe reflective awareness as an array of concomitant phenomena, such as multiple self-representation and dialogical interaction. Purcell et al.'s (1993) systematic psychometric work depended heavily on Rossi's phenomenological theory of self-reflectiveness. However, their articulation of "levels" of reflective awareness (e.g., noticed anomalies, dual self-representation, and explicit lucidity) is also problematic. According to preliminary analyses of data from our recent research project (i.e., Lee, Kuiken, & Czupryn, 2007), these "levels" may actually reflect qualitatively different patterns of reflective awareness. More specifically, Lee et al. (2007) developed questionnaire items that include Rossi's (1985) and Purcell et al.'s (1993) multi-faceted descriptions of self-reflectiveness, as well as relevant characteristics identified in other studies (e.g., Barrett, 1992a; Cicogna & Bosinelli, 2001; Green & McCreery, 1994; Kahan et al., 1997; LaBerge & DeGracia, 2000; LaBerge & Gackenbach, 2000; Tulku, 2000). Factor analysis (principal components, varimax rotation) revealed a pattern that we have subsequently replicated. Five of the nine factors could be used to create scales with high internal consistency and conceptual clarity:

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[1] More specifically, these seven levels were specified as follows: "(1) No people or personal associations in the dream; (2) People and personal associations are present in the dream but the dreamer is not; (3) The dreamer is completely caught up in the drama of the dream; (4) The dreamer is present as an observer in the dream but takes no active part in its drama; (5) Soliloquy and dialogue in the dream; (6) Multiple states of being in the dream; and (7) Multiple levels of awareness in the dream" (Rossi, 1985, p. 131-141).

(1) *lucid mindfulness*: a form of reflective awareness analogous to waking mindfulness, involving explicit lucidity and detached acceptance of ongoing thoughts and feelings;
(2) *dual perspectives*: a form of reflective awareness involving two separate and autonomous agents (e.g., two levels of self-representation);
(3) *depersonalization*: a form of reflective awareness in which the dreamer's sense of self seems unreal or strange;
(4) *intra-dream self-awareness*: a form of reflective awareness involving self-awareness within the dream (but not explicit awareness of dreaming); and
(5) *willed appearances*: a form of reflective awareness that involves the emergence of dream objects or figures in response to the dreamer's wishes.

This factor structure indicates the independence of a "lucid mindfulness" factor. Its theoretical value has less frequently been addressed in Western empirical studies of lucid dreaming than has intra-dream self-awareness (e.g., Kahan et al., 1997; Kozmová & Wolman, 2006; Purcell et al., 1993).

Dream Reflective Awareness and Dream Types

There is some suggestion in the literature that reflective awareness may occur most regularly in specific types of dreams. Based on the research on dreams from long-term meditators, Hunt (1989) compared archetypal dreams, especially in their lucid form, to the spiritual effects of meditation. He implies that reflective awareness during dreams, perhaps especially lucid mindfulness, might be associated with particular dream types. However, this possibility needs to be tested empirically within a systematic framework that compares empirically determined dream types.

In a series of studies conducted by Kuiken and his colleagues (Busink & Kuiken, 1996; Kuiken & Sikora, 1993), dreams were systematically classified into different types according to the overall similarities among participants' descriptions of their own dream experiences.[2] More specifically, these studies have identified three major types of impactful dreams based on numerous distinctive properties that cross several domains (i.e., feelings and emotions, motives and goals, sensory phenomena, movement characteristics, dream transitions, and dream endings) of dream experiences (i.e., Busink & Kuiken, 1996; Kuiken, Lee, Eng, & Singh, 2006; Kuiken & Sikora, 1993): (1) *nightmares* (i.e., anxiety dreams) involved fear, harm avoidance, auditory anomalies, vigorous activity, physical metamorphoses, and intense affect at the end (arousal); (2) *existential dreams* involved sadness and despair, separation, light/dark contrast, inhibition (fatigue), affective shifts, and intense affect at the end (enactment); and (3) *transcendent dreams* (roughly equivalent to the archetypal dreams described by Hunt) involved ecstasy and awe, magical success, extraordinary light, vigorous activity, shifts in perspective, and intense affect at the end (positive affective tone but without a distinctive emotional climax). *Mundane dreams*, in contrast, lacked these features in general.

In the original classificatory studies of impactful dreams (Busink & Kuiken, 1996; Kuiken & Sikora, 1993), explicit awareness of dreaming, as assessed in the conventional all-or-none manner, was not associated with any of the primary dream types. This was also found in our recent study of these impactful dream types (Kuiken et al., 2006). However, initial evidence that transcendent dreams are associated with one of the five patterns of dream reflective awareness (*willed appearances*) (Lee et al., 2007) suggests that somewhat subtler patterns of reflective awareness may be specific to each impactful dream type. This possibility is also consistent with evidence that, in the original studies, transcendent dreams and existential dreams contained what are considered

[2] The importance of distinguishing between different types of dreams is also stressed by other scholars (e.g., Hunt, 1989). For example, Hunt's proposal of the varieties of dreaming and multiple dream types was presented with relevant historical and cultural background. Kuiken and his colleagues were the first to establish empirically a typology, which conformed in general terms to the one advanced by Hunt.

"prelucid" forms of reflective awareness, e.g., dreamers perceived themselves from an external perspective (*dual perspectives*) or experienced a strange and unfamiliar feeling about themselves (*depersonalization*), although without explicit awareness of dreaming (Busink & Kuiken, 1996; Kuiken & Sikora, 1993). For these reasons, the first objective of the present study was to examine the relations between impactful dream types and the measures of dream reflective awareness described above. Of particular importance was the possibility that transcendent dreams would, as Hunt implied, show higher levels of lucid mindfulness (*Hypothesis 1*).

Relations between Waking and Dreaming Reflective Awareness

Lucid mindfulness during dreaming may be associated with the same—or analogous—forms of reflective awareness during waking. According to the continuity hypothesis, which has been consistently supported by empirical research (Domhoff, 1996, 1999), most aspects of dream content correspond with waking thoughts and concerns. However, there is little empirical evidence supporting the specific hypothesis that waking reflective awareness is predictive of or continuous with dream reflective awareness. There is a study indicating that long-term meditators report high levels of dream lucidity (Hunt, 1991). Also, there is evidence that experienced lucid dreamers show relatively high levels of non-visual (e.g., auditory, kinesthetic, olfactory) imagining ability, high absorption in imaginative events, high spatial and analytic skills, high creativity, and internally oriented perspectives and experiences (field independence), as well as internal locus of control (Blagrove & Hartnell, 2000; Gackenbach, Heilman, Boyt, & LaBerge, 1985; Gruber, Steffen, & Vonderhaar, 1995; LaBerge & Gackenbach, 2000; Schredl & Erlacher, 2004; Snyder & Gackenbach, 1988; Spadafora & Hunt, 1990).

Past research on long-term TM practitioners' experiences of "witnessing dreaming" (i.e., the experiences of a quiet, peaceful, inner awareness of wakefulness completely separate from the dream; Gackenbach, 1991a) also

suggested that a higher state of consciousness (pure consciousness) could exist and manifest itself during the dream, even during deep sleep (in this case, it is termed "witnessing [deep] sleep") (Alexander et al., 1987; Gackenbach, 1991a; Gackenbach & Bosveld, 1989). There is also evidence that the self-reported experiences of a higher state of consciousness coincides with supportive physiological correlates (e.g., higher frontal EEG coherence and alpha power) that can be identified in both waking and sleeping states (e.g., Mason et al., 1997; Travis, Tecce, Arenander, & Wallace, 2002), as well as during the transitions from waking to sleeping and from sleeping to dreaming (i.e., Travis, 1994). These findings all suggest that there is continuity between dreaming and waking forms of cognition, and perhaps, continuity of reflective awareness. However, this continuity requires further empirical examination with more specific indices of reflective awareness.

Thus, the second objective of the present study was to examine empirically whether pre-dream waking reflective awareness would predict patterns of dream reflective awareness (i.e., the direct continuity hypothesis). More importantly, according to the research regarding transcendental consciousness (e.g., Alexander et al., 1987; Gackenbach, 1991a; Travis, 1994), we expected that the mindful state of consciousness would persist during the transition from waking to dreaming. In addition, based on Wilber's (1977, 1979) suggestion that consciousness develops in a hierarchical order through identification with a current structure of consciousness while incorporating but dis-identifying with the preceding (lower) level of consciousness, we expected that moving toward a mindful state of consciousness (i.e., a higher state of reflective awareness) would incorporate the "lower" object-referral mode of self-awareness (Travis et al., 2004) (internal state awareness; Fenigstein, Scheier, & Buss, 1975) (i.e., the awareness of one's own feelings, thoughts, actions, etc.). Therefore, the present study systematically investigated the continuity of pre-dream waking mindfulness with *lucid mindfulness* during the dream (*Hypothesis 2a*) and with *intra-dream self-awareness* (*Hypothesis 2b*).[3]

[3] Given *Hypothesis 1*, we were also prepared for the possibility that the direct continuity

Changes of Life and Dreams following Loss and Trauma

Past research has suggested that life following loss and trauma should not simply be understood as a process of readjustment, but rather as a continuous struggle with a new sense of self and way of experiencing the world (Tedeschi & Calhoun, 2004). Both loss and trauma seem to trigger existential awareness and a search for meaning, and then the either despairing or transcendent developments that follow such a search (Landsman, 2002). Knowing more about these transcendent developments following loss and trauma may help us to understand the relations between waking reflective awareness and dream reflective awareness. Tedeschi and Calhoun (2004) proposed that, among people who experience post-traumatic growth, waking patterns of awareness shift from ruminative styles to reflective styles. Therefore, if there is continuity between waking and dreaming, it is possible that dream reflective awareness following loss or trauma may also shift toward decreased rumination and increased lucid mindfulness and intra-dream self-awareness.

There is ample evidence that loss and trauma alter dreaming in other ways. First, there is evidence that people who have experienced trauma (e.g., physical assault) have dream content that reflects those traumatic events and that post-traumatic dreams gradually change to carry more positive connotations (Bulkeley & Kahan, 2008; Esposito, Benitez, Barza, & Mellman, 1999; Germain et al., 2004; Hartmann, 1996, 1998a, 1998b; Hartmann, Zborowski, & Kunzendorf, 2001; Hartmann, Zborowski, Rosen, & Grace, 2001; Kramer, 1990; Levin & Nielsen, 2007; Mellman, David, Bustamante, Torres, & Fins, 2001; Nielsen, Stenstrom, & Levin, 2006; Propper, Stickgold, Keeley, & Christman, 2007; Punamäki, 1997, 1998, 2007; Punamäki, Ali, Ismahil, & Nuutinen, 2005; Valli et al., 2005; Valli, Revonsuo, Pälkäs, & Punamäki, 2006; Wittmann, Schredl,

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hypothesis might be specific to particular dream types. Perhaps, for instance, the continuity between pre-dream waking mindfulness and lucid mindfulness during dreaming would be especially evident in transcendent dreams. For this reason, we also examined the moderating effects of dream type on the relations between pre-dream waking reflective awareness and dream reflective awareness.

& Kramer, 2007). Second, although the evidence is less clear, people who have experienced loss (e.g., due to the death of someone close) have dream content that reflects their response to and recovery from such loss (Barrett, 1992b; Belicki, Gulko, Ruzycki, & Aristotle, 2003; Domhoff, 2007; Garfield, 1996). However, beyond this compelling evidence of changes in dream content, whether there are changes in lucid mindfulness and intra-dream self-awareness remains unclear.

Clarification of such changes may require separate consideration of loss and trauma. Although both loss and trauma are disturbing experiences and may be similar in certain situations (i.e., traumatic grief/loss; Regehr & Sussman, 2004), research suggests that loss and trauma have different psychological effects. For instance, in terms of cognitive processes, experiencing trauma may cause the reappearance of painfully intrusive thoughts (rumination) related to distressing traumatic events, while experiencing loss may cause imaginative (and often positive) revisitation by the deceased. In terms of affective reactions, experiencing trauma may result in general anxiety of threat or danger, while experiencing loss may result in separation anxiety and intense sadness. In addition, although avoidance and arousal phenomena appear in either case, trauma tends to bring about hypervigilance, accompanied by pervasive avoidance of danger and social isolation, while loss tends to bring about excessive attention to the cues of a lost person and reluctance to admit the reality of loss (Raphael & Martinek, 1997). Thus, a direct comparison of loss and trauma may provide fruitful information about the contrasting patterns of waking and dreaming reflective awareness that follow each of these types of distressing events.

This contrast is especially important to consider over time. In the case of bereavement, there is evidence that the peak occurrence of transcendent dreams follows the peak occurrence of nightmares and existential dreams (Kuiken & Lee, in preparation), suggesting that the development of mindfulness, perhaps especially in transcendent dreams, may occur in the late stages of bereavement. More specifically, we expected that, during bereavement, the increased mindfulness during waking would precipitate corresponding changes in lucid mindfulness during dreams and perhaps changes in intra-dream self-awareness as

well (following the same rationale as for *Hypothesis 2a* and *Hypothesis 2b*). In contrast, because traumatic experiences are associated with ruminative thoughts (i.e., Raphael & Martinek, 1997) and because mindfulness is negatively correlated with rumination (i.e., Brown & Ryan, 2003), we expected that people who have experienced significant trauma would manifest the transition from rumination to mindfulness more slowly than people who have experienced significant loss.

Thus, to examine more closely the continuity between waking reflective awareness and dream reflective awareness, one objective of the present study was to determine whether changes in waking reflective awareness after significant loss or trauma would mediate corresponding changes in dream reflectiveness (i.e., the mediated continuity hypothesis). In particular, we systematically examined whether loss-induced or trauma-induced changes in pre-dream waking mindfulness would mediate changes in lucid mindfulness during dreams (*Hypothesis 2c*) and intra-dream self-awareness (*Hypothesis 2d*).

Reflective Awareness and Self-Transformative Effects of Dreams

Hitherto, the continuity hypothesis (Domhoff, 1996), which has mainly focused on the unidirectional effects of waking emotional concerns on dream content, does not further address the transformative effects of dreams on the dreamer's subsequent life. Although some studies have suggested that dreams may significantly influence a dreamer's waking life, these studies tend to explain dreams' self-altering effects (e.g., the facilitation of psychological and spiritual growth) as unfolding from the dreamer's reflection *after* awakening (e.g., Ewing, 1990; Hill, 2004). While post-dream interpretative efforts may have theoretical and practical value, we need to know more about whether the self-transformative potential of dreams is evident during the dream itself, independent of deliberate interpretation or explanation after awakening. Perhaps, the contrasting patterns of reflective awareness during dreaming anticipate different forms of dream-induced changes in the dreamer's waking thoughts and feelings, especially waking reflective awareness.

Most studies of the influence of reflective awareness during dreaming on subsequent waking life have addressed the significance of lucid dreams, although they have examined only the effects of explicit awareness of dreaming. Moreover, their focus has been mainly on their therapeutic utility (e.g., treatment for nightmares) and their role in skill development (e.g., practice in a simulated world) (LaBerge, 1985; Zadra, 1996; Zadra & Pihl, 1997). Among the preliminary accounts of the transformative effects of lucid dreams, some studies have considered the importance of dream control in mastering life (Tholey, 1988). This approach, however, may reflect a Euro-North American view of dreaming and its practical value. Some research has indicated that lucid dreaming is valued for different reasons in East Asian social and cultural contexts, where lucid dreaming, understood as analogous to mindfulness meditation, is regarded as a path toward self-transcendence (Alexander et al., 1987; Gackenbach, 1991a; Hunt, 1989, 1991; Hunt & Ogilvie, 1988; Tedlock, 2004; Tulku, 2000). In other words, the self-transformative potential of dreaming lies in its attentive awareness, rather than problem mastery, that is carried over into wakefulness.

Therefore, the third objective of the present study was to investigate the self-transformative potential of specific patterns of dream reflective awareness, especially the dream aftereffects derived from lucid mindfulness during dreaming. More specifically, following the same rationale proposed for the possible continuity from pre-dream waking mindfulness to lucid mindfulness during dreams and intra-dream self-awareness, we expected that lucid mindfulness within dreams (but *not* intra-dream self-awareness) would predict continuity of reflective awareness toward the post-dream waking state, including increases in mindfulness (*Hypothesis 3a*), increases in reflection (*Hypothesis 3b*), and decreases in rumination (*Hypothesis 3c*).[4]

[4] Perhaps, the self-transformative effects of reflective awareness in dreams are also dependent upon impactful dream types. More specifically, although the appearance of dream reflective awareness (especially lucid mindfulness) might facilitate changes in the subsequent waking life (e.g., from rumination toward reflection and mindfulness) independent of dream types, the interaction between dream type and dream reflective awareness might predict changes in different aspects or degrees of subsequent waking reflective awareness (e.g., lucid mindfulness in transcendent dreams might intensify the original transformative effects on changes in waking mindfulness as they are present independently). Thus, we also examined the moderating effects of

Measurement of Waking Reflective Awareness

In the present study, three forms of waking reflective awareness are of theoretical importance. First, *mindfulness* (self-referral reflection) is clearly important because of its central role in all three of the research issues—and in our theoretically driven hypotheses. In mindfulness, the individual is able to recognize that all feelings and thoughts are created by his/her own mind (Travis et al., 2004). Second, *reflection* (object-referral reflection), which involves ordinary attention to personal thoughts, feelings, and activities, is hierarchically "lower" than mindfulness. Third, *rumination* is a neurotic form of reflection ("lower" than either mindfulness or ordinary reflection), which involves persistent and repetitive attention to personal thoughts, feelings, and activities. In the following, the terms mindfulness, reflection, and rumination will consistently be used to refer to these distinctions, although terminology in this area remains difficult both conceptually and empirically.

(1) Mindfulness

The psychometric work on individual differences in mindfulness is still sparse and guided by disparate theoretical perspectives. For instance, in their measure of individual differences in mindfulness, Brown and Ryan (2003) focused on attentive awareness; Bishop et al. (2004) addressed attentive awareness and openness to experience; Baer, Smith, and Allen (2004) considered attentive awareness and non-judgmental acceptance (although they assessed other aspects of these two main concepts as well); and Walach, Buchheld, Buttenmüller, Kleinknecht, and Schmidt (2006) assessed attentive awareness, non-judgmental acceptance, and dis-identification (including what is sometimes termed "letting go" or "non-dwelling"). Among these preliminary efforts,

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dream type on the above hypotheses.

Brown and Ryan's Mindful Attention Awareness Scale (MAAS) and Walach et al.'s Freiburg Mindfulness Inventory (FMI) are most conceptually refined and empirically developed. Thus, the present research was designed to use the MAAS and the FMI to determine which measure of mindfulness during waking would predict dream reflective awareness, in particular, lucid mindfulness. However, the items in the MAAS more closely reflect concentration than mindfulness (see Mikulas, 2007). So, we were more confident that the FMI would predict lucid mindfulness in dreams and intra-dream self-awareness than we were that the MAAS would do so. We also expected that FMI would be a more sensitive scale than MAAS to predict the effects of lucid mindfulness on changes in waking mindfulness.

(2) Reflection and Rumination

Trapnell and Campbell (1999) provided evidence that the traditional and oft-used measure of private self-consciousness (Fenigstein et al., 1975) conflated two related but distinct concepts: reflection and rumination. Specifically, they found that their own measures of rumination and reflection (i.e., the Rumination—Reflection Questionnaire, RRQ) were both positively correlated with the Private Self-Consciousness Scale (Fenigstein et al., 1975). However, they also found that only their measure of reflection, but not their measure of rumination, was significantly related to the "internal state awareness" factor of the Private Self-Consciousness Scale. Therefore, we expected that the distinction between reflection and rumination, as measured by Trapnell and Campbell (1999), would be pivotal in our attempt to differentiate between mindfulness, ordinary reflection, and rumination.

Thus, differentiating between mindfulness, reflection, and rumination during waking may advance our understanding of the corresponding patterns of reflective

awareness across waking and dreaming states. More specifically, for the direct and mediated continuity hypotheses, we expected that pre-dream waking mindfulness would predict dream reflective awareness (i.e., lucid mindfulness and intra-dream self-awareness), but we would not expect that either waking reflection or waking rumination would predict either of these forms of dream reflective awareness. Also, we expected that lucid mindfulness within dreams would predict post-dream changes in waking mindfulness, reflection and rumination as well, although these changes might be in different directions. (See specific hypotheses for research issues 2 and 3.)

Research Objectives

To summarize, by examining reflective awareness within different types of impactful dreams following loss and trauma, we may enhance our understanding of the self-transformative potential of dreams and their connection with waking life. More specifically, the objectives of this study were to explore three related issues regarding reflective awareness in dreams:

1) Are patterns of dream reflective awareness related to different types of impactful dreams? (*Issue 1*)
2) Are the patterns of reflective awareness in impactful dreams predicted by pre-dream waking reflective awareness (i.e., direct continuity) (in addition, does dream type have moderating effects on these predictions?), especially by the changes in pre-dream waking reflective awareness that follow significant loss and trauma (i.e., mediated continuity)? (*Issue 2*)
3) Do altered patterns of reflective awareness in impactful dreams predict changes in subsequent waking thoughts and feelings, especially waking reflective awareness? Does dream type have moderating effects on these predictions? (*Issue 3*)

Accordingly, specific hypotheses were generated based on our theoretical interests in mindfulness and its transcendent nature:

1) The occurrence of lucid mindfulness would vary depending on different types of dreams. More specifically, lucid mindfulness would be more commonly found in transcendent dreams than in the other types of dreams (*Hypothesis 1*).
2) Pre-dream waking mindfulness would predict lucid mindfulness (*Hypothesis 2a*) and intra-dream self-awareness (*Hypothesis 2b*) (i.e., direct continuity). (In addition, dream type may show moderating effects on these predictions.) Significant loss/trauma and the timeframe of such experiences would predict variations in lucid mindfulness during dreaming, but these variations would be mediated by the levels of pre-dream waking mindfulness (*Hypothesis 2c*); similarly, significant loss/trauma and the timeframe of such experiences would predict variations of intra-dream self-awareness, but these variations would be mediated by pre-dream waking mindfulness (*Hypothesis 2d*) (i.e., mediated continuity).
3) Lucid mindfulness within dreams would predict subsequent increases in waking mindfulness (*Hypothesis 3a*), increases in waking reflection (*Hypothesis 3b*), but decreases in rumination (*Hypothesis 3c*). (In addition, dream type may show moderating effects on these predictions.)

The hypothesized model is summarized in Figure 2.

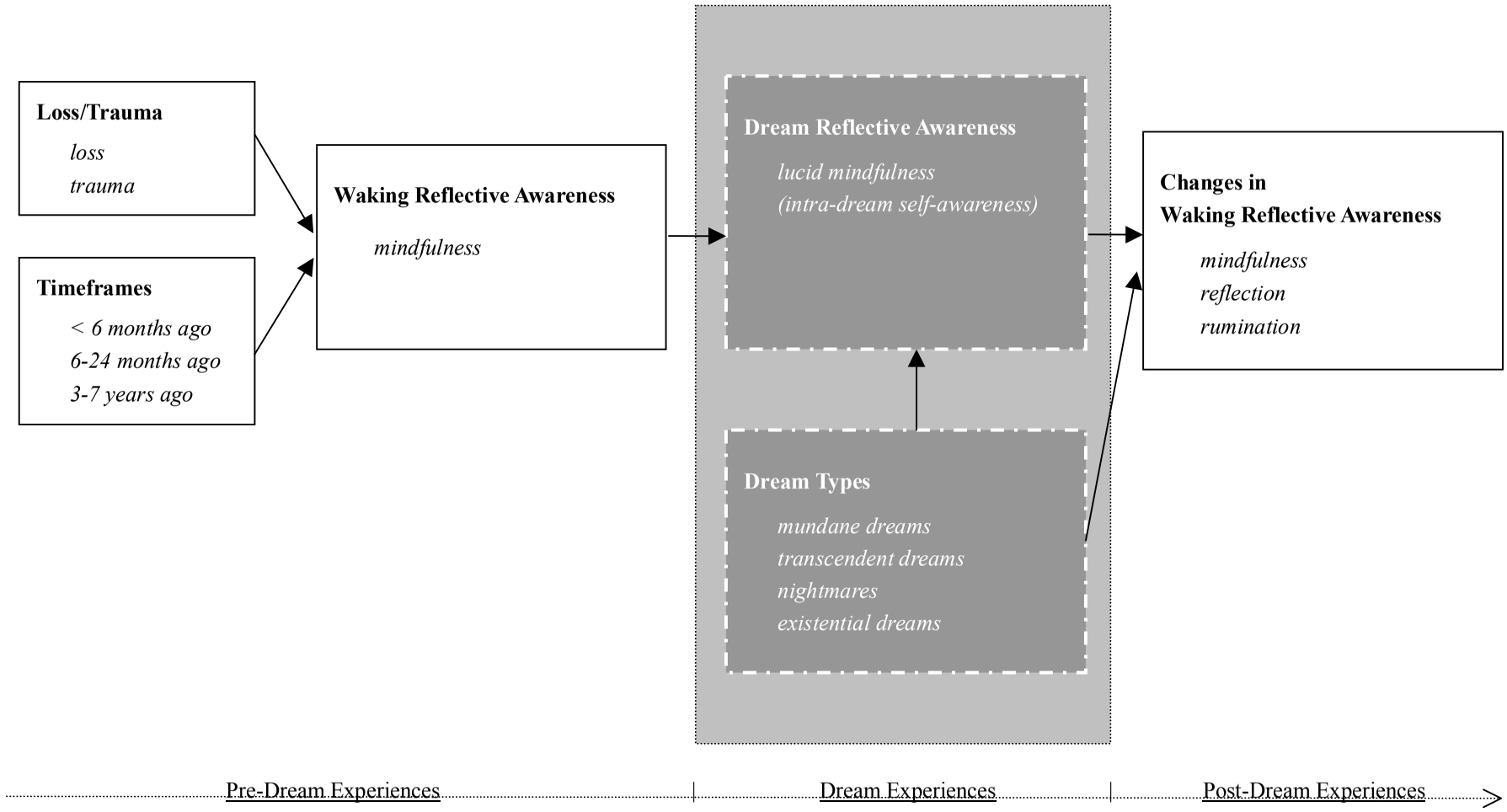

Figure 2. The hypothesized model of continuity of reflective awareness between dreaming and waking experiences.

CHAPTER Ⅱ

METHODS

Overview

We conducted a 2 (loss/trauma experiences) X 3 (timeframe: within the preceding 6 months, within the preceding 6-24 months, within the preceding 3-7 years) cross-sectional study to examine reflective awareness within impactful dreams and the changes in subsequent waking reflective awareness and waking thoughts and feelings induced by such dreams. The reason for trichotomizing the timeframe was to obtain contrasting profiles of significant loss/trauma experiences (and expected different reactions during wakefulness) across time and their possibly different dream features and dream function. A previous study on impactful dreams and bereavement suggested the peak appearances of dream types occurred at different intervals following a significant loss due to death. Specifically, nightmares were relatively frequent only during the first six months; existential dreams were also especially frequent during the first six months, and transcendent dreams did not appear frequently until relatively late during bereavement (Kuiken & Lee, in preparation). Also, according to Prigerson and Maciejewski (2008), indicators of grief (i.e., disbelief, yearning, anger, and sadness) were most common within the first six months following loss with gradual attenuation beginning at 4 months to about two years following loss. Because of these qualitative differences across time, we chose to compare dreaming and waking reflective awareness during three periods: (1) the immediately critical period (i.e., within 6 months) after significant loss or trauma; (2) the recovery period (i.e., within 6-24 months) after significant loss or trauma; and (3) the relatively remote period (i.e., within 3-7 years) after significant loss or trauma.

Consistent with this rationale, we categorized participants into six distinct groups according to their loss and trauma histories: (1) within the preceding 6 months, experienced significant loss (e.g., loss through death of a family member

or close friend); (2) within the preceding 6 months, experienced significant trauma (e.g., trauma through physical assault, criminal victimization, life-threatening accident, or natural disaster); (3) within the preceding 6-24 months, experienced significant loss; (4) within the preceding 6-24 months, experienced significant trauma; (5) within the preceding 3-7 years, experienced significant loss; (6) within the preceding 3-7 years, experienced significant trauma.

Participants

One-hundred and seventy-eight university students who had distinctive loss and trauma histories, had remembered dreams and experienced impactful dreams on a frequent and intense basis,[5] as well as had personal computers and access to the Internet at home, participated in this study for partial course credit. After excluding those who did not appropriately complete all research sessions and those who could not be precisely classified into one of the six research groups described above, 87 participants' data (63.2% female, 36.8% male, mean age = 19.85 years) were included in the subsequent analyses (see Table 1 for detailed demographic characteristics of each group).

[5] This participant recruiting strategy was also to ensure that most participants would be able to report an impactful dream and complete relevant questionnaires. However, in consideration of the stringent criteria for selecting participants with significant loss or trauma, we had to compromise the selective criteria for dreaming experiences and dream recall rate to a less strict one (i.e., during the previous 12 months, they had remembered dreams, approximately, at least once per month and had dreams that affected their waking thoughts and feelings).

Table 1

Demographic Characteristics of Each Group

Group	*n*	Age (*M*)	Male (%)	Female (%)	Ethnic background		
					Euro-North American and European (%)	East and South Asian (%)	Other (%)
Loss							
< 6 months ago	11	19.45	27.3	72.7	90.9	0	9.1
6-24 months ago	17	19.87	35.3	64.7	53.0	23.5	23.5
3-7 years ago	12	19.13	50.0	50.0	50.0	50.0	0
Trauma							
< 6 months ago	14	20.00	28.6	71.4	64.3	21.4	14.3
6-24 months ago	12	19.82	41.7	58.3	58.3	33.3	8.3
3-7 years ago	21	20.34	38.1	61.9	42.8	52.4	4.8

With regard to participants' general sleep and dream patterns during the 30 days prior to the first lab session, we found that (1) most of them reported remembering dreams about 2-10 times (63.2%), some reported remembering dreams more than 10 times (27.5%), and only a few of them reported remembering only once or not at all (9.2%); in addition, the majority of the participants in this study reported having experienced bad dreams less than 6 times (90.7%); (2) the majority of them did not experience recurring dreams or nightmares at all (i.e., recurring dreams: 63.2%; nightmares: 64.4%), but some of them had experienced them one to five times (i.e., recurring dreams: 31.0%; nightmares: 34.5%), and only a few of them reported having experienced recurring dreams or nightmares more frequently[6]; and (3) the majority of them did not experience sleep terrors or sleep paralysis at all (i.e., sleep terrors: 78.2%; sleep paralysis: 81.6%); although some of them had experienced them one time (i.e., sleep terrors: 14.9%; sleep paralysis: 11.5%) or even more frequently, they were relatively rare conditions compared to the other dream patterns.

Measures

Loss/Trauma Questionnaire (LTQ). The 61-item LTQ[7] (Eng, Kuiken, Temme, & Sharma, 2005) was used to obtain information about participants' loss and trauma history, including items that helped identify (1) whether they had experienced certain type(s) of loss/trauma, (2) how long ago the specific loss/trauma occurred, (3) the cause of that death (for the *Loss Inventory* only), and

[6] The contrast between the frequencies of bad dreams and nightmares indicated that not all bad dreams were considered as nightmares to the dreamers, and this information further supports our phenomenological differentiation between existential dreams, with their constructive effects, and nightmares.

[7] In this study, we also administered the other 86-item scale that was attached to this questionnaire to measure the greatest influence of loss or trauma on current thoughts and feelings. More specifically, this scale is composed of 3 psychobiological factors (Depression, Orienting Response, Hyperarousal) and 13 psychosocial factors (Feeling Inexpressibility, Death Finality, Expanded Future, Foreshortened Future, Numbness, Self-Blame, Death as Release, Time Integration, Vivid Reminiscences, Avoidability, Intrusive Thoughts, Depersonalization, and Amnesia). Sample items include: "I have gotten tired from doing almost everything [*Depression*]", "I felt guilty about the things I did [*Self-Blame*]", and "I have been trying not to do things that remind me of my (loss/trauma) [*Intrusive Thoughts*]". The results generated from this scale will be presented in a separate research report.

(4) how intensely the specific loss/trauma affected them when it occurred (see Appendix A). (Before the LTQ, a demographic information sheet was used to collect participants' basic information about gender, birth date, and ethnicity)

Rumination—Reflection Questionnaire (RRQ). The 24-item RRQ (Trapnell & Campbell, 1999) was used to measure waking reflection styles (see Appendix B) (*Rumination* subscale: Cronbach's α = .92; *Reflection* subscale: Cronbach's α = .89). The *Rumination* subscale is composed of 12 items, such as "Long after an argument or disagreement is over with, my thoughts keep going back to what happened" and "It is easy for me to put unwanted thoughts out of my mind" (reverse-scored item). The *Reflection* subscale is also composed of 12 items, such as "My attitudes and feelings about things fascinate me" and "Contemplating myself isn't my idea of fun" (reverse-scored item).

Mindfulness Inventory. The 15-item Mindful Attention Awareness Scale (MAAS) (Brown & Ryan, 2003) (see Appendix C) (Cronbach's α = .87) and the 14-item Freiburg Mindfulness Inventory (FMI) (Walach et al., 2006) (see Appendix D) (Cronbach's α = .85) were used to measure waking levels of *mindfulness*. The MAAS includes items such as "I find myself doing things without paying attention" (all items are reverse-scored); the FMI includes items such as "I am open to the experience of the present moment" and "I am impatient with myself and with others" (reverse-scored item).

Sleep and Dream Questionnaire (SDQ). This 6-item questionnaire was designed to measure general patterns of sleep and dreams. Participants were asked to report the frequency of the following events during the preceding 30 days: (1) remembering any kind of dream; (2) experiencing bad dreams; (3) experiencing recurring dreams; (4) experiencing nightmares; (5) experiencing sleep terrors; and (6) experiencing sleep paralysis (see Appendix E).

Impactful Dream Recording. This section of the questionnaire was designed to obtain reports of original dream experiences. Participants were asked to record a specific impactful dream, i.e., a dream that significantly influenced their thoughts and feelings after awakening. They were asked to describe their dreams as exactly and as fully as they could remember them, from beginning to end, in

their own words, and without any interpretation or explanation. They were told to describe, if possible, the following: (1) all the objects, places, characters, and events in the dream; (2) the entire sequence of actions and events, from the beginning to the end of the dream; (3) their moment-to-moment thoughts and feelings, from the beginning to the end of the dream; and (4) any unusual, incongruous, or implausible dream thoughts, feelings, objects, places, characters, or events (see Appendix F).

Impactful Dreams Questionnaire (IDQ). A 26-item version of the Impactful Dreams Questionnaire, based on the previous phenomenological classification of impactful dreams (i.e., Busink & Kuiken, 1996; Kuiken et al., 2006; Kuiken & Sikora, 1993), was used to identify three different types of impactful dreams (e.g., nightmares, existential dreams, and transcendent dreams) and mundane dreams. Items were designed to represent the feelings and emotions, motives and goals, sensory phenomena, movement characteristics, dream transitions, and dream endings that had previously distinguished three types of impactful dreams (e.g., "In my dream, I experienced the spontaneous emergence of clear and distinct feelings" and "In my dream, I repeatedly tried to avoid harm to myself or others" and "My dream involved unusual forms of or sources of light") (see Appendix G).

Dream Reflective Awareness Questionnaire (DRAQ). A 19-item questionnaire measuring reflective awareness within dreams was developed by Lee et al. (2007) to assess numerous aspects of reflective awareness, including items such as: "During my dream, I became split into two parts; I was able to experience the dream world from either perspective" and "For at least a moment during my dream, I explicitly reflected on the way I was acting within the dream." As indicated earlier, five major subscales based on the factor structure were created to measure the different patterns of dream reflective awareness (i.e., Lucid Mindfulness, Cronbach's $\alpha = .73$; Dual Perspectives, Cronbach's $\alpha = .79$; Depersonalization, Cronbach's $\alpha = .62$; Intra-Dream Self-Awareness, Cronbach's $\alpha = .71$; Willed Appearances, Cronbach's $\alpha = .57$). For comparison purposes, two more items, which involved Lucid Control (a form of reflective awareness involving explicit lucidity, as well as the ability to control the unfolding dream)

and Lucid Ineffectuality (a form of reflective awareness involving explicit lucidity but failed dream control), were also created in this study (see Appendix H).

Post-Dream Questionnaire (PDQ). This questionnaire is composed of three subscales used to measure dream-induced changes on waking thoughts and feelings. It includes (1) a 4-item subscale measuring Self-Perceptual Depth (Cronbach's α = .65) (e.g., "After my dream, I felt sensitive to aspects of my life that I usually ignore"); (2) a 10-item subscale measuring Spiritual Transformation (Cronbach's α = .81) (e.g., "After my dream, I felt a new sense of my spiritual potential" [*global spiritual potential*] [Cronbach's α = .79], "After my dream, I felt an inner freedom, a sense of liberation from life's tangles and hindrances" [*spiritual release*] [Cronbach's α = .56], and "After my dream, I had the sense that all things [people, animals, plants, and even objects] were alive" [*inclusive enlivenment*] [Cronbach's α = .57]); and (3) a 3-item subscale measuring Existential Disquietude (Cronbach's α = .79) (e.g., "After my dream, I began to reconsider my existential convictions") (Kuiken et al., 2006) (see Appendix I).

Procedure

Participants who completed mass testing in introductory psychology courses at University of Alberta were the sample (N = 3,617) from which selection occurred. Eligible participants were those who had remembered dreams and experienced impactful dreams on an intense and frequent basis (i.e., during the previous 12 months, they had remembered dreams, approximately, at least once per month and had dreams that affected their waking thoughts and feelings); in addition, for initial screening purposes, they had to fit into only one of the groups in this study (for mass testing questionnaires, see Appendix J).

At the beginning of each research session, participants were informed of the nature of this study, assured of the anonymity and confidentiality of their participation (see Appendix K), and asked for written and informed consent (see Appendix L). Then, participants were asked to complete a series of background measures individually, through the online research system (in separate lab spaces):

RRQ, MAAS, FMI, LTQ, and SDQ, respectively. Toward the end of this session, participants were given a short debriefing regarding the task they had just completed. Then, they were informed of the follow-up procedure of this study and asked to sign the second consent form if they agreed to continue participation (see Appendix M and Appendix N). Also, participants were told how to obtain access to the online research session (see Appendix O). Specifically, they were told how to record, immediately after awakening, the first impactful dream that they experienced following the initial laboratory session (i.e., the first dream that seemed at least as impactful as their most impactful dream during the preceding four weeks [one month]). When this criterion was reached, participants were supposed to record their dreams and complete related questionnaires upon awakening. Each participant was asked to report only one impactful dream at this stage of participation. Nevertheless, since experiencing an impactful dream might be relatively rare and unpredictable, participants were allowed one month to complete this task (although this requirement would only take about 45-50 minutes). For their course requirement, they were also assured of the opportunity to obtain research credits by completing the alternative educational activity if no impactful dreams could be recalled in the one-month period.

Additionally, to ensure that participants would not check out the online questionnaires before they were ready to record their impactful dreams, the following information was shown on the entrance web page of the online research system: "(1) Please do not login to this research website unless: (a) you are ready to report an impactful dream *immediately upon awakening* (i.e., a dream that is as impactful as the most impactful dream during the preceding four weeks [one month]); or, (b) you are returning (between 4:00PM and 12:00AM *during the evening that follows your impactful dream*) to complete the evening session. (2) The online research system will record the time that you record your impactful dream and the time that you complete the evening session. So, if necessary, we will send you a reminder to complete the evening session." Participants were allowed to proceed when they felt ready to report their dreams. To describe this impactful dream, participants were asked to complete a series of dream-related

measures: i.e., Impactful Dream Recording, IDQ, DRAQ, and PDQ, respectively.

For their final task, which was to be undertaken on the evening following their impactful dream, participants completed the series of measures of waking reflective awareness again (e.g., rumination—reflection, mindfulness; *posttest measure*) (This pre-test/post-test design allowed us to examine the transformation of waking reflective awareness that may be induced by impactful dreams). Upon completion of these tasks, each participant arranged for a return to the laboratory where they were given a complete debriefing (see Appendix P). Participants were also asked to sign a release form if they agreed to give their consent to the inclusion, in subsequent published or presented reports, of anonymous quotations from the dream reports that they provided in this study (see Appendix Q).

Some research design features are worth mentioning here: (1) all of our research sessions were to be completed through an online research system, so that the results from different sessions could be compared more systematically and allowed us to exclude the possibility of the influence of response sets or test-taking attitudes due to the nature of research materials; (2) also, this online research design allowed participants to be able to record their impactful dreams immediately after awakening and return on that evening to respond to the other set of questionnaires; (3) to ensure that participants did follow our research procedure, we monitored the timing information and removed those who did not complete morning and evening sessions appropriately.

Identifying Six Different Loss and Trauma Groups

The mass testing procedure provided us with a preliminary basis to recruit participants who had remembered dreams and experienced impactful dreams on an intense and frequent basis, with diverse loss and trauma backgrounds. However, to categorize participants more precisely into one of the six predetermined groups, the following strategy was used according to participants' responses on the *Loss/Trauma Questionnaire (LTQ)*, administered during the first stage of their participation (see Table 2). Those who had previously experienced both

significant loss and trauma, within a similar timeframe and on an equivalent intensity basis, were not classified and have been excluded from the analysis of this study.

Table 2

Categorization of Six Different Loss and Trauma Groups

Loss group(s)	Description
< 6 months ago	The first loss group (within the preceding six-month timeframe) consisted of those who had experienced a significant loss (e.g., loss through death of a family member or close friend) due to "natural" causes, including unexpected illness and long-term illness: (a) with moderate (rating = 2) to extreme (rating = 4) severity during the preceding six months; and (b) without experiencing a significant trauma (i.e., not fitting into the criteria used to define the trauma condition) within the previous six months.
6-24 months ago	The second loss group (within the preceding six-month-to-two-year timeframe) consisted of those who had experienced a significant loss (e.g., loss through death of a family member or close friend) due to "natural" causes, including unexpected illness and long-term illness: (a) with moderate to extreme severity during the preceding six to twenty-four months; and (b) without experiencing a significant loss of moderate to extreme severity during the preceding six months; and (c) without experiencing a significant trauma (i.e., not fitting into the criteria used to define the trauma condition) within the previous two years.
3-7 years ago	The third loss group (within the preceding three-to-seven-year timeframe) consisted of those who had experienced a significant loss (e.g., loss through death of a family member or close friend) due to "natural" causes, including unexpected illness and long-term illness: (a) with moderate to extreme severity during the preceding three to seven years; and (b) without experiencing a significant loss of moderate to extreme severity during the preceding two years; and (c) without experiencing a significant trauma (i.e., not fitting into the criteria used to define the trauma condition) within the previous seven years.

(table continues)

Table 2 *(continued)*

Categorization of Six Different Loss and Trauma Groups

Trauma group(s)	Description
< 6 months ago	The first trauma group (within the preceding six-month timeframe) consisted of those who had experienced a significant trauma (e.g., trauma through physical assault, criminal victimization, life-threatening accident, or natural disaster): (a) with moderate to extreme severity during the preceding six months; and (b) without experiencing a significant loss (i.e., not fitting into the criteria used to define the loss condition) within the previous six months.
6-24 months ago	The second trauma group (within the preceding six-month-to-two-year timeframe) consisted of those who had experienced a significant trauma (e.g., trauma through physical assault, criminal victimization, life-threatening accident, or natural disaster): (a) with moderate to extreme severity during the preceding six to twenty-four months; and (b) without experiencing a significant trauma of moderate to extreme severity during the preceding six months; and (c) without experiencing a significant loss (i.e., not fitting into the criteria used to define the loss condition) within the previous two years.
3-7 years ago	The third trauma group (within the preceding three-to-seven-year timeframe) consisted of those who had experienced a significant trauma (e.g., trauma through physical assault, criminal victimization, life-threatening accident, or natural disaster): (a) with moderate to extreme severity during the preceding three to seven years; and (b) without experiencing a significant trauma of moderate to extreme severity during the preceding two years; and (c) without experiencing a significant loss (i.e., not fitting into the criteria used to define the loss condition) within the previous seven years.

CHAPTER Ⅲ

RESULTS

The research issues investigated in the present study were nearly unprecedented in dream studies, except for some of our own previous work in this area. Thus, we proceeded with three levels of data analyses to facilitate our understanding of the proposed three research issues. First, we examined the aforementioned theoretically derived hypotheses (i.e., theory-driven hypothesis testing). Second, we examined several other hypotheses based solely on relationships observed in our previous studies (i.e., Busink & Kuiken, 1996; Kuiken et al., 2006; Kuiken & Sikora, 1993; Lee et al., 2007). Specifically, if a significant relationship had been observed in at least two previous studies (i.e., replicated once), then we determined whether the present study provided a second replication of that relationship. These second-level analyses were only undertaken for research issues 1 and 3 (these specific hypotheses will be described below) since there was no previous research related to research issue 2. Finally, the third-level analyses involved the exploratory investigation of other relationships that might be related to our three research issues.

Different dream types were identified based on the assessment of their similarities to the attribute profiles that define typical nightmares, existential dreams, transcendent dreams, and mundane dreams (Kuiken, 2009).[1] More specifically, each participant's responses on the 26-item Impactful Dreams Questionnaire constituted a particular response profile for the reported dream. The

[1] Unlike other oversimplified classificatory approaches in the field of contemporary dream studies, Kuiken's approach emphasizes the polythetic approach to classifying dream types, rather than the monothetic approach typical in contemporary dream studies(e.g., identifying nightmares based solely on negative emotion that awakens the dreamer) (Kuiken, 1991). Following his taxonomic and phenomenological approach, Kuiken (2009) established the classificatory criteria (representative attribute profiles) for impactful dreams and mundane dreams. According to this approach, a profile matching strategy can be used to identify the dream types in a new sample of dreams. More specifically, we used the attribute profiles derived from the full set of valid measures of dream reports collected in the present study to identify three types of impactful dreams (i.e., nightmares, existential dreams, transcendent dreams). Since, in this study, most participants had significant loss or trauma histories and because we asked all participants to report an impactful dream, we used the more conservative attribute profile derived from Study 1 in Kuiken et al.'s (2006) research as the basis for identifying mundane dreams.

squared Euclidean distance between the response profile of each dream and the attribute profiles that represented each dream type (i.e., transcendent dreams, nightmares, existential dreams, and mundane dreams) was calculated, providing a basis for comparison of the similarities between each reported dream and the typical attribute profiles of all four dream types. For instance, if the response profile of a reported dream was most similar to the transcendent dream profile (i.e., least dissimilar to that profile), this case was classified as a transcendent dream. The results showed that, among the 87 participants in our final sample, there were reports of 17 transcendent dreams, 21 nightmares, 30 existential dreams, and 19 mundane dreams.

In the present study, five patterns of dream reflective awareness were differentiated based on the factor structure found in a prior preliminary study (Lee et al., 2007). The average ratings of each participant's responses to items in each factor (each subscale) were calculated to represent the intensity of those particular forms of dream reflective awareness experienced during the dream. We found that, with the exception of *intra-dream self-awareness*, the average level of each pattern of dream reflective awareness was relatively low on a five-point scale in which 0 = "not at all true" and 4 = "extremely true": lucid mindfulness[2] (M = .90, SD = 1.11), dual perspectives (M = .88, SD = .92), depersonalization (M = .81, SD = .88), intra-dream self-awareness (M = 1.63, SD = 1.00), and willed appearances (M = .81, SD = .83). The correlations between the subscales of dream reflective awareness are shown in detail in Table 3. As an indicator of construct validity, the low-to-moderate correlations between these subscales suggest that these five patterns are distinctive factors although all of them reflect a superordinate theoretical concept—dream reflective awareness.

[2] For comparison purposes, we also examined lucid control (M = .25, SD = .61) and lucid ineffectuality (M = .74, SD = 1.28) whenever the results regarding lucid mindfulness were statistically significant.

Table 3

Intercorrelations Between Subscales of Dream Reflective Awareness

Dream reflective awareness	1	2	3	4	5
1. Lucid mindfulness	--	.28	.13	.33	.37
2. Dual perspectives		--	.21	.26	.13
3. Depersonalization			--	.13	.18
4. Intra-dream self-awareness				--	.39
5. Willed appearances					--

A. THEORY-DRIVEN HYPOTHESIS TESTING

Research Issue 1: Dream Reflective Awareness and Dream Types

First, we examined whether lucid mindfulness was more commonly found in transcendent dreams than in the other types of dreams (*Hypothesis 1*). We conducted three planned contrasts between transcendent dreams and each of the other three dream types, using the score on lucid mindfulness as the dependent variable. The results indicated that ratings of *lucid mindfulness* were higher in *transcendent dreams* than they were in *nightmares*, $t(83) = 3.13$, $p < .01$. Although the ratings of lucid mindfulness were the highest among those in all dream types, the other two planned contrasts did not show statistically significant results. Then, we also used a one-way ANOVA to examine the relationship between dream type and lucid mindfulness. The results showed that the effect of dream type on lucid

mindfulness was significant, $F(3,83) = 3.38$, $p < .05$. Post hoc Tukey's HSD comparisons indicated the same pattern ($p < .05$) suggested by the above planned contrasts (see Table 4).[3]

Research Issue 2: Direct Continuity Hypothesis

We examined whether pre-dream waking mindfulness would predict lucid mindfulness (*Hypothesis 2a*) and intra-dream self-awareness (*Hypothesis 2b*) (i.e., the direct continuity hypothesis). To examine *Hypothesis 2a*, we conducted two-way ANOVAs that involved the pretest score on waking mindfulness (a continuous variable) and dream type (a categorical variable) as between-subjects independent variables and the score on lucid mindfulness as the dependent variable. Since two measures of waking mindfulness (i.e., MAAS and FMI) were used in this study, the two-way ANOVAs were conducted twice to test this hypothesis. To examine *Hypothesis 2b*, the same procedures as above were used again, but the score on intra-dream self-awareness was treated as the dependent variable instead.

The results indicated that neither the main effect of pre-dream waking mindfulness in predicting lucid mindfulness nor the main effect of pre-dream waking mindfulness in predicting intra-dream self-awareness was statistically significant. However, there was a significant dream type main effect on intra-dream self-awareness, $F(3,79) = 3.05$, $p < .05$, and there was a significant pre-dream waking mindfulness (measured using the 15-item MAAS) by dream type interaction effect on intra-dream self-awareness as well, $F(3,79) = 2.99$, $p < .05$. Since pre-dream waking mindfulness was a continuous variable, a series of correlation analyses between pre-dream waking mindfulness and intra-dream self-awareness was conducted for each dream type. The results showed that only for mundane dreams was there a significant *positive correlation between*

[3] Since one of these results regarding lucid mindfulness was significant, we further examined whether there might be similar patterns observed for lucid control and lucid ineffectuality. However, it was suggested that lucid control and lucid ineffectuality were not more commonly found in transcendent dreams than in the other three types of dreams. Also, the one-way ANOVAs did not suggest significant results for lucid control and lucid ineffectuality, either.

pre-dream waking mindfulness and intra-dream self-awareness ($r = .59$, $p < .01$). This significant relationship was observed using the MAAS but not the FMI, as we had anticipated.

Research Issue 2: Mediated Continuity Hypothesis

We examined whether pre-dream waking mindfulness mediated the effects of loss and trauma histories on patterns of dream reflective awareness, especially lucid mindfulness (*Hypothesis 2c*) and intra-dream self-awareness (*Hypothesis 2d*) (i.e., the mediated continuity hypothesis). The analytic strategy suggested by Baron and Kenny (1986) was followed. To examine *Hypothesis 2c*, first of all, due to the limitation of small sample size for each cell, we compromised the analytic strategy by conducting a two-way ANOVA, with loss/trauma and timeframe as between-subjects independent variables (instead of a three-way ANOVA which involved dream type as another independent variable), and with the score on lucid mindfulness as the dependent variable. The analytic strategy was that, if this result were significant, we then would conduct the following two analyses. Specifically, we would conduct two two-way ANOVAs, again, with loss/trauma and timeframe as between-subjects independent variables, and with the pretest scores on waking mindfulness as dependent variables (i.e., measures based on MAAS and FMI, which were analyzed separately). Finally, we would redo the first set of two-way ANOVAs, with pretest scores on waking mindfulness as covariates (scores on MAAS and FMI were also treated as covariates separately). Following this analytic strategy suggested by Baron and Kenny, if controlling the variance of pretest scores on waking mindfulness substantially eliminates the original effects of independent variables (i.e., loss and trauma histories) on dependent variables (i.e., lucid mindfulness), we may conclude that pre-dream waking mindfulness functions as a mediator in this presumed effect. To examine *Hypothesis 2d*, the same procedures as above were applied again, but the score on intra-dream self-awareness, instead of the score on lucid mindfulness, was used as the dependent variable.

The results showed that, neither the main effects nor the interaction between loss/trauma and timeframe on lucid mindfulness in dreams was statistically significant. Similarly, neither the main effects nor the interaction between loss/trauma and timeframe on intra-dream self-awareness was statistically significant (see Table 5 for detailed means for each cell). Therefore, it was unnecessary to proceed with the follow-up steps for testing the possibility of mediated continuity. In other words, the "mediated continuity hypotheses" (*Hypothesis 2c* and *Hypothesis 2d*) were not supported.

Research Issue 3: Self-Transformative Effects of Dreams

We examined whether lucid mindfulness within dreams would predict subsequent increases in waking mindfulness (*Hypothesis 3a*), increases in waking reflection (*Hypothesis 3b*), but decreases in waking rumination (*Hypothesis 3c*). To examine these hypotheses, a difference score indicating a change in waking reflective awareness was calculated by subtracting the pretest score from the posttest score on the three aspects of waking reflective awareness (i.e., mindfulness, reflection, rumination). Then, to examine *Hypothesis 3a*, we conducted two two-way ANOVAs that involved the score on lucid mindfulness within dreams (a continuous variable) and dream type (a categorical variable) as between-subjects independent variables and the two change scores on waking mindfulness as dependent variables. Similarly, to examine *Hypothesis 3b* and *Hypothesis 3c*, the same procedure as the above was used, but instead, the change scores on waking reflection and rumination were treated as the dependent variables.

The results indicated that neither the main effects (for both lucid mindfulness and dream type) nor the interaction effects between these two factors were significant. That is, none of these three theory-driven hypotheses for research issue 3 were supported.

Table 4

Mean Scores on Five Patterns of Dream Reflective Awareness across Different Dream Types

	Dream type				
Dream reflective awareness	Mundane dreams	Transcendent dreams	Nightmares	Existential dreams	Comparison
Lucid mindfulness	1.03	1.47	.38	.87	T > N **
Dual perspectives	.27	1.30	.77	1.11	T > M ** E > M **
Depersonalization	.30	1.25	.51	1.10	T > M ** T > N ** E > M ** E > N *
Intra-dream self-awareness	1.26	1.84	1.33	1.94	*ns*
Willed appearances	.46	1.25	.56	.95	T > M ** T > N **

Note. T = transcendent dreams; M = mundane dreams; N = nightmares; E = existential dreams.

* $p < .05$. ** $p < .01$.

Table 5

Mean Dream Reflective Awareness as a Function of Loss/Trauma and Timeframe

Dream reflective awareness	Timeframe			Total
	< 6 months ago	6-24 months ago	3-7 years ago	
Lucid mindfulness				
Loss	.95	1.09	1.17	1.08
Trauma	.29	.71	1.10	.76
Total	.58	.93	1.12	.90
Dual perspectives				
Loss	.87	.73	.77	.78
Trauma	.97	1.05	.93	.97
Total	.93	.86	.87	.88
Depersonalization				
Loss	.18	1.10	.31	.61
Trauma	.88	1.42	.80	.98[a]
Total	.57	1.23[b]	.62	.81
Intra-dream self-awareness	1.50	1.63	1.88	1.67
Loss	1.54	1.67	1.58	1.59
Trauma	1.52	1.65	1.69	1.63
Total				
Willed appearances				
Loss	.45	.79	1.00	.76
Trauma	.83	.83	.86	.84
Total	.67	.81	.91	.81

[a] Higher than the mean ratings on this scale for the loss groups.
[b] Higher than the mean ratings on this scale for the other two timeframe groups.

B. REPLICABILITY HYPOTHESIS TESTING

Research Issue 1: Dream Reflective Awareness and Dream Types

We examined whether there were replicable results based on our previous research findings. More specifically, two original studies on impactful dreams indicated that both transcendent dreams and existential dreams were associated with *dual perspectives* and *depersonalization*, although different terminology and measures were used (i.e., Busink & Kuiken, 1996; Kuiken & Sikora, 1993); also, our previous, preliminary research on dream reflective awareness showed that transcendent dreams were associated with *willed appearances* (Lee et al., 2007; in both of its two studies). Based on these previous results, a series of planned contrasts was conducted to determine whether these relationships could be replicated. The results suggested the following: (1) *Dual perspectives* were more commonly found in transcendent dreams than in mundane dreams, $t(83) = 3.61$, $p < .01$; dual perspectives were also more commonly found in existential dreams than in mundane dreams, $t(83) = 3.35$, $p < .01$. (2) *Depersonalization* was more commonly found in transcendent dreams than in mundane dreams, $t(83) = 3.49$, $p < .01$, and in nightmares, $t(83) = 2.78$, $p < .01$. In addition, depersonalization was more commonly found in existential dreams than in mundane dreams, $t(83) = 3.37$, $p < .01$, and in nightmares, $t(83) = 2.56$, $p < .05$. (3) *Willed appearances* were more commonly found in transcendent dreams than in mundane dreams, $t(83) = 3.02$, $p < .01$, and in nightmares, $t(83) = 2.71$, $p < .01$ (see Table 4).

Then, we further used a series of one-way ANOVAs to examine whether there might be additional findings apart from the results of these planned contrasts. The results indicated that the effects of dream type on these three patterns of dream reflective awareness were all significant: dual perspectives, $F(3,83) = 5.43$, $p < .01$; depersonalization, $F(3,83) = 6.39$, $p < .01$; willed appearances, $F(3,83) = 4.09$, $p < .01$. Post hoc Tukey's HSD comparisons indicated similar patterns suggested by the above planned contrasts although no additional significant results were found. These findings suggested that the present study replicated

significant results obtained in the prior studies.[4]

Research Issue 3: Self-Transformative Effects of Dreams

Kuiken and his colleagues' series of studies on impactful dreams also suggested the significance of dream-induced changes in waking thoughts and feelings, especially the effects on *spiritual transformation*, *self-perceptual depth*, and *existential disquietude*. More specifically, dreams can sometimes prompt the dreamers to recognize spiritual possibilities and change their spiritual lives accordingly—or what we call spiritual transformation. Self-perceptual depth can be considered as a form of feeling-oriented reflection (Gendlin, 1997), which alters and deepens dreamers' sense of themselves and their personal concerns. Existential disquietude connotes the emergence and acceptance of existential doubt that can be induced by dreams. Recent studies have indicated that impactful dreams have different effects on subsequent waking thoughts and feelings: transcendent dreams facilitate spiritual transformation; existential dreams prompt self-perceptual depth and existential disquietude (Busink & Kuiken, 1996; Kuiken et al., 2006; Kuiken & Sikora, 1993). Therefore, we examined whether these previously observed relationships were replicated in the present study.

In Kuiken et al.'s (2006) Study 2, spiritual transformation was further differentiated into three factors: (1) *global spiritual potential*: with emphasis on "previously unrecognized spiritual possibilities" (i.e., as the major focus of spiritual transformation in the original studies); (2) *spiritual release*: with emphasis on "refreshing—even ecstatic—freedom from life's entanglements;" and (3) *inclusive enlivenment*: with emphasis on "a spatially and temporally unbounded sense of life in all things" (p. 269). Thus, the present study was intended to investigate these three specific dimensions, instead of the general concept for spiritual transformation used in the past.

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[4] For exploratory reasons, the relationship between dream type and intra-dream self-awareness was also examined. The results suggested that the effects of dream type on intra-dream self-awareness were significant, $F(3,83) = 2.87$, $p < .05$. However, further post hoc Tukey's HSD comparisons did not indicate any significant difference between dream types.

A series of planned contrasts was employed to examine these possibilities. The findings suggested the following: Transcendent dreams were more likely to be associated with *global spiritual potential* than all other three types of dreams: T > M, $t(83) = 3.64$, $p < .001$; T > N, $t(83) = 3.39$, $p < .01$; T > E, $t(83) = 2.53$, $p < .05$ (T = transcendent dreams; M = mundane dreams; N = nightmares; E = existential dreams). Similarly, transcendent dreams were more likely to be associated with *spiritual release* than all three other types of dreams: T > M, $t(83) = 4.79$, $p < .001$; T > N, $t(83) = 4.03$, $p < .001$; T > E, $t(83) = 4.18$, $p < .001$. Also, transcendent dreams were more likely to be associated with *inclusive enlivenment* than were mundane dreams, $t(82) = 2.32$, $p < .05$. With regard to existential dreams, we found that existential dreams were more likely to be associated with *self-perceptual depth* than were mundane dreams, $t(83) = 3.23$, $p < .01$, and nightmares, $t(83) = 2.23$, $p < .05$. In addition, existential dreams were more likely to be associated with *existential disquietude* than were mundane dreams, $t(83) = 2.92$, $p < .01$ (see Table 6).

Then, we further conducted a series of one-way ANOVAs to examine whether there might be additional findings. The results indicated that the effects of dream type on these measures of changes in waking thoughts and feelings were all significant: global spiritual potential, $F(3,83) = 5.38$, $p < .01$; spiritual release, $F(3,83) = 9.04$, $p < .001$; inclusive enlivenment, $F(3,82) = 2.80$, $p < .05$; self-perceptual depth, $F(3,83) = 3.84$, $p < .05$; existential disquietude, $F(3,83) = 3.00$, $p < .05$. Post hoc Tukey's HSD comparisons indicated similar patterns suggested by the above planned contrasts although there were no additional significant results. The above results replicated the previously observed relationships between impactful dreams and dream-induced changes in subsequent waking thoughts and feelings (i.e., spiritual transformation, self-perceptual depth, existential disquietude).

Table 6

Mean Scores on Changes in Waking Thoughts and Feelings across Different Dream Types

Changes in waking thoughts and feelings	Dream type				Comparison
	Mundane dreams	Transcendent dreams	Nightmares	Existential dreams	
Global spiritual potential	.13	.79	.19	.34	T > M *** T > N ** T > E *
Spiritual release	.16	1.06	.32	.35	T > M *** T > N *** T > E ***
Inclusive enlivenment	.18	.79	.38	.74	T > M *
Self-perceptual depth	1.03	1.46	1.30	1.86	E > M ** E > N *
Existential disquietude	.39	.75	.67	1.08	E > M **

Note. T = transcendent dreams; M = mundane dreams; N = nightmares; E = existential dreams.
* $p < .05$. ** $p < .01$. *** $p < .001$.

C. EXPLORATORY ANALYSES

In exploratory analyses, we found that the *loss/trauma by dream type interaction effect for lucid mindfulness* (but not for intra-dream self-awareness) was statistically significant, $F(3,79) = 2.81$, $p < .05$.[5] The results further indicated

[5] Since the results regarding lucid mindfulness were distinctive, we further examined whether lucid control and lucid ineffectuality revealed the similar patterns. However, our findings

that there was a simple main effect of dream type for the loss groups, $F(3,79) = 3.02$, $p < .05$. Post hoc Tukey's HSD comparisons indicated that ratings of the lucid mindfulness items were higher in transcendent dreams than they were in mundane dreams, $p < .05$. There was also a simple main effect of dream type for the trauma groups, $F(3,79) = 3.66$, $p < .05$. Post hoc Tukey's HSD comparisons indicated that ratings of the lucid mindfulness items were lower in nightmares than in mundane dreams, $p < .05$ (see Figure 3).

The exploratory analyses also suggested that, independent of the measures of pre-dream waking reflective awareness, the experiences of loss and trauma were predictive of reflective awareness within dreams. Specifically, the influence of *loss/trauma* experiences on *depersonalization* was significant, indicating that ratings of the depersonalization items were higher in the trauma groups than they were in the loss groups, $F(1,81) = 7.89$, $p < .01$. There was also a main effect of *timeframe* on *depersonalization*, $F(2,81) = 7.12$, $p < .01$. Post hoc Tukey's HSD comparisons indicated that ratings of the depersonalization items were higher in the 6-24 month timeframe groups than they were in the most recent (i.e., within the preceding 6 months) groups, $p < .05$, and in the relatively remote (i.e., within the preceding 3-7 years) groups, $p < .05$. However, no interactions between loss/trauma and timeframe on any pattern of dream reflective awareness were statistically significant (see Table 5). (Due to the exploratory nature of these analyses, a more stringent criterion, $\alpha < .01$ after Bonferroni corrections, was applied for each test.)

Since the two scales of waking mindfulness (i.e., MAAS and FMI) were intended to measure the same underlying construct, mindfulness, and the measures of waking reflection and waking rumination were conceptually related (both positively correlated with the "self-reflectiveness" factor of the PrSC scale; Fenigstein et al., 1975), we conducted two sets of MANOVAs, as an analytic strategy to control Type I error rate, to test the possible relationships between dream reflective awareness and dream-induced changes in waking reflective

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suggested that there were no significant loss/trauma by dream type interaction effects on lucid control and lucid ineffectuality.

awareness. The findings indicated a significant main effect of depersonalization during the dream on subsequent changes in waking mindfulness, Wilk's $\lambda = .92$, $p < .05$. More specifically, *depersonalization within dreams was negatively associated with subsequent changes in mindfulness during waking* (measures based on the 14-item FMI), $F(1,78) = 6.20$, $p < .05$ ($r = -.22$, $p < .05$).

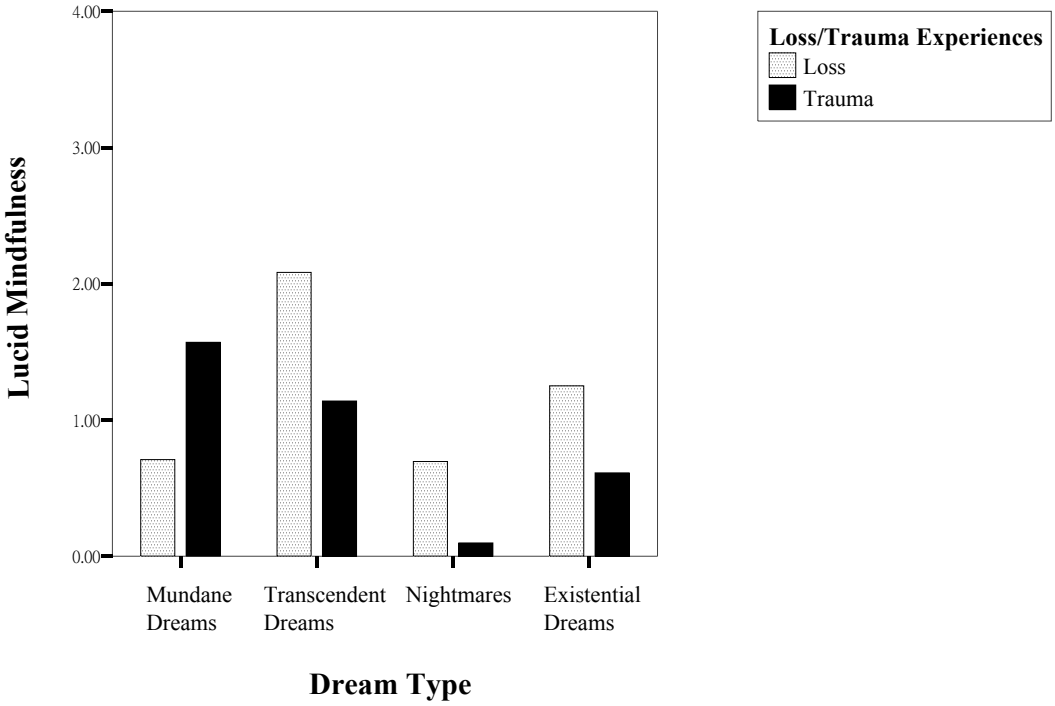

Figure 3. Loss/trauma by dream type interaction on lucid mindfulness.

CHAPTER Ⅳ

DISCUSSION

Dream Reflective Awareness and Dream Types

The results regarding research issue 1 in the present study suggested that different patterns of dream reflective awareness were associated with different dream types. As hypothesized, transcendent dreams were distinctively associated with "lucid mindfulness." Thus, as indicated for the first time in this study, only transcendent dreams were associated with explicit lucidity (i.e., specifically lucid mindfulness, not lucid control or lucid ineffectuality), suggesting that there might be some similarity between lucid dreams and transcendent dreams (Hunt, 1991; Spadafora & Hunt, 1990). That is, both may involve mystical experiences consisting of magical abilities, goal attainment, sense of clarity and ecstasy and ineffable significance, etc. However, the findings in this study also support the idea that lucid dreams are not necessarily transcendent and may not have a spiritual component.

Moreover, the results supported prior evidence from two studies of impactful dreams (i.e., Busink & Kuiken, 1996; Kuiken & Sikora, 1993) that transcendent dreams and existential dreams contain certain *prelucid* forms (e.g., Green & McCreery, 1994; Rossi, 1985) of dream reflective awareness. More specifically, across four studies (i.e., Busink & Kuiken, 1996; Kuiken & Sikora, 1993; Lee et al., 2007; the present study), the results suggest that "dual perspectives (external self-observation, in the first two of the previous studies)" is more prevalent in transcendent dreams and existential dreams than in mundane dreams. Also, across three studies (i.e., Kuiken & Sikora, 1993; Lee et al., 2007; the present study), "depersonalization (feeling unfamiliar or strange about one's own actions, in the original two studies)" was rated higher in transcendent dreams than in both mundane dreams and nightmares. And, across three studies (i.e., Busink & Kuiken, 1996; Kuiken & Sikora, 1993; the present study), there is now evidence that "depersonalization" is more prevalent in existential dreams than in both mundane

dreams and nightmares. Finally, the results replicated our previous findings that "willed appearances" were most commonly found in transcendent dreams (i.e., Lee et al., 2007).

Generally speaking, the findings with regard to dream reflective awareness and dream types were strongly supportive of the results from our previous studies, although the results in this study showed slightly different patterns than before. Most important, our finding that transcendent dreams are associated with explicit lucidity (i.e., *lucid mindfulness*) has not been documented in the past research. The present study adopted some special methodological strategies that might have contributed to the sources of differences between the present and previous findings. For instance, (1) in the first lab session, participants were separated into different single rooms and had individual access to the on-line research system (instead of participating in small groups), and then (2) participants were requested to record their first impactful dream immediately after awakening (instead of describing the dream that, for example, during the preceding three months, most significantly influenced their thoughts and feelings after awakening). We believe that the requirement of a quiet and independent space during research participation allows participants to respond more comfortably and openly to the questionnaires without disturbances. Also, our prospective rather than retrospective research design may generate more reliable and valid results, since dream recall errors may be considerably reduced. We believe that these strategies may also help to reduce socially desirable response biases (Crowne & Marlowe, 1964; Reynolds, 1982). All of these factors may account for the somewhat different results found in this study. We suggest that these refined methods of gathering dream reports and responses to related questionnaires are worth considering in future research.

Pre-Dream Waking Reflective Awareness and Dream Reflective Awareness

The "direct continuity hypothesis" was partly and modestly supported by our findings that, rather than a main effect for pre-dream waking mindfulness on

lucid mindfulness or intra-dream self-awareness, we found that waking mindfulness only predicted intra-dream self-awareness in mundane dreams. Mundane dreams generally involved low incidences of dream reflective awareness except for *lucid mindfulness*. There was no significant difference in the ratings between mundane dreams and transcendent dreams, which had the highest ratings of lucid mindfulness; also, mundane dreams had higher ratings of lucid mindfulness than nightmares (p = .059). Thus, our evidence suggests that the mundane dreams reported in the present study contained a form of self-reflection analogous to what Rossi (1985) described as follows: "the dreamer is present as an observer in the dream but takes no active part in its drama." It is a stepped-back, detached perspective during the dream, without too much emotional and experiential involvement while the dream unfolds. At this level (i.e., the fourth level), according to Rossi, a state of self-reflection within the dream begins to appear, in such a way that the dreamer starts to have an "outside perspective" while dreaming; that is, the dreamer seems to be watching a movie or drama about others' stories, although it could actually be a presentation of the dreamer's personal life or inner world.

It seems that a detached perspective can be either visuo-spatial, purely noetic, or perhaps both, although these different forms warrant further investigation. For example, one of our dream reports[6] was a typical mundane dream that manifested the detached dreamer perspective as well as relatively low levels of attempted control. The dreamer reported dreaming about being in bed but somehow still able to see and hear what was going on somewhere beside a cliff that was present in an early dream scenario although not nearby her bed within the dream. This suggests that the dreamer was viewing the "cliff scene" from a distance. This dream did not contain strong emotional responses, and this tendency also suggests relative detachment.[7] Moreover, another piece of evidence of the detached perspective

[6] We cannot quote this dream here since this participant did not give consent for the inclusion of her dream report.

[7] Since it is not always clear what kind of perspectives the dreamer might have within the dream from reading dream reports per se, the dreamer's self-ratings of dream experiences also play an important role here. Among all mundane dreams, this is one of the two cases with the highest ratings on lucid mindfulness (rating: 3) but the lowest ratings on dual perspectives (rating: 0) (on a

may be derived from the description of this dreamer's infrequent actions within the dream. By contrast, there is evidence of communicative actions that greatly revealed the dialogical and reasoning components within the dream, which were also an indication of self-reflection.

Another typical example of mundane dreams in this study did not show the visuo-spatial form of detachment within the dream, but a noetic quality of mindfulness:[8]

> I was at my old high school, visiting, and saw the mother of my ex-best friend, who I have had a huge falling out with. She told me that they got a new puppy, and their cats and other dog really misses me, as well as the ex friend's sisters. I was told that the ex-friend is not home, and I should visit now. I took a detour and dropped my things off at my house, and arrived at the friend's house without the mother. I rang the door bell, and the youngest sister of the friend opened the door, but didn't make a sound. Just as I was about to call out a greeting, the friend walked out of the hallway perpendicular to the door, as if going to get it, and saw me. In the dream, it has been about three or four months since the friend and I have stopped talking and completely avoided each other. When she saw me, her eyes started getting teary and she reached out as if to hug me. I don't remember if she said, "I'm sorry too." or something along the lines of thinking I was there to apologize, but I knew that was what she thought I was doing, so I stepped back, out of the reach of her hug and said, "I'm not here for you." She started crying and stood and stared at me for a while before going back to her room. Her sister looked at me, not accusingly but sad and resigned. I was still invited in, and after playing with her pets for a while, and joking with the sisters, I left.

In this dream, although the dreamer received the invitation and visited her ex-friend's home, she was not intending to resume the broken friendship. Apparently, her lack of emotional responses to her ex-friend and the ex-friend's sisters was not due to carelessness or mindlessness. In fact, it seemed to represent her determination to accept what things had been like and letting things go without dwelling on the past. There was not much striving, but instead, a feeling

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scale from 0 = "not at all true" to 4 = "extremely true"), as its distinct features of dream reflective awareness.

[8] This dream was rated relatively high by the dreamer on lucid mindfulness (rating: 2), but again, not on dual perspectives (rating: 0). Also, this dream was rated low on lucid control as well as lucid ineffectuality (both ratings: 0.5). However, the rating on intra-dream self-awareness was also high (rating: 2.75) (on a scale from 0 = "not at all true" to 4 = "extremely true").

of tranquility arose. Although the dreamer was attuned to the present moment during the dream, her infrequent attempts at control and her emotional reactions also indicate a noetic form of detached dreamer perspective. As to mindfulness, the emotion is being experienced, but the experiencer is not identifying with the emotion. In other words, the emotion per se is not being avoided or negated, but recognized and then let go (released). Although the noetic detached perspective signifies infrequent emotional responses, it is different from emotional detachment. More specifically, noetic detachment (an intellectual capacity of mindfulness) needs to be acquired by cultivation. The apparent "lack of emotional responses" in mindfulness has to be distinguished from the concept of emotional detachment, which may be related to suppression or repression. Moreover, generally speaking, the noetic detached perspective is also different from the emotional detachment experienced in the state of depersonalization. From our understanding of this dream report, although it is not very clear that the dreamer was not identifying with her emotions, there is evidence of intuitive and attentive awareness, non-judgmental acceptance (e.g., accepting the deterioration of friendship by simply stepping back, describing her attitude, and then smoothing over the conflict), as well as letting it be.

We believe that the special lucid quality observed in some mundane dreams[9] in this study may account for the interaction effect regarding the continuity between pre-dream waking mindfulness and intra-dream self-awareness. Although mundane dreams are not considered impactful according to the criteria by which we categorized dreams and not expected to have significant effects on waking life, mundane dreams in this study (with a certain degree of lucid mindfulness) might actually function as a bridge between the waking and dreaming reflective minds. Perhaps, the adoption of a somewhat detached perspective within the dream implies that the dreamer has moved toward an altered, higher state of

[9] A methodological issue deserves particular mention here. Since these dreams were reported by participants who had experienced significant loss or trauma, and, based on their own subjective judgment, these dreams were also regarded as somehow influential or significant, we consider the mundane dreams gathered in this study to be less mundane than other regular, non-impactful dreams. Thus, we suggest that the interpretation of our results regarding comparisons between dream types and the interaction effects that involved mundane dreams should take into account these factors and be more conservative in generalizing the findings.

consciousness shared by both waking and dreaming states, a possibility that echoes research about witnessing dreams (e.g., Alexander et al., 1987; Gackenbach, 1991a). This aspect of the continuity between waking and dreaming consciousness warrants further investigation.

Nevertheless, the findings did not suggest a general relationship between pre-dream waking mindfulness and lucid mindfulness during the dream. This may be due to the following reasons. First, this particular cross-state relationship may not be easily observed in a university student sample due to restricted variance associated with our measures. Second, lucid mindfulness was less commonly found in dream experiences than intra-dream self-awareness was. That is, the extremely low frequency of lucid mindfulness and again its restricted variance may result in the relation between pre-dream waking mindfulness and lucid mindfulness being difficult to be detected. Finally, the scales we used to measure waking mindfulness might mainly reflect the "attentive awareness" aspect of mindfulness, but not much about the realization of a higher, spiritual Self, or, the self-referral mode of self-awareness. Perhaps, the concept of "lucid waking" suggested by Tart (2001) is required to address specifically its continuity with lucid mindfulness during dreaming.

The detached perspective from the dream scenario may explain why these mundane dreams, in general, were rated as low in the qualities that constituted our classification of impactful dreams (i.e., intensity in specific combinations of dream attributes including feelings and emotions, motives and goals, sensory phenomena, movement characteristics, dream transitions, and dream endings). In contrast, the reason impactful dreams (especially existential dreams and nightmares) were categorized as impactful may be because dreamers were more involved in the dream drama. We suggest that future studies consider investigating "absorption" (i.e., "a disposition for having episodes of 'total' attention that fully engage one's representational [i.e., perceptual, enactive, imaginative, and ideational] resources" [p. 268]; Tellegen & Atkinson, 1974) and exploring its possible contribution to reflective awareness.[10]

[10] Another related research topic is "phenomenological reflection" through immediate

Although there is evidence that absorption was positively associated with lucid dream frequency (Schredl & Erlacher, 2004) and both nightmare prevalence and nightmare distress (Levin & Fireman, 2001) and that absorption might contribute to the aftereffects of impactful dreams, especially self-perceptual depth following existential dreams (Kuiken & Nielsen, 1996), further research remains necessary to address these issues more deeply.

Loss/Trauma, Timeframe, and Dream Reflective Awareness

Although the results in the present study did not support the "mediated continuity hypothesis" for lucid mindfulness and intra-dream self-awareness, we found that, independent of the measures of pre-dream waking reflective awareness, personal histories of loss and trauma predicted certain forms of reflective awareness within dreams. More specifically, the results suggested the following important findings: (1) the distributions of patterns of dream reflective awareness following loss and trauma were fundamentally different for *depersonalization*. Experiencing this distinct form of reflective awareness within the dream seems to correspond well with the feelings of dissociation commonly reported after trauma (Bernstein & Putnam, 1986; Putnam, 1985; Wilson, 2006); (2) independent of the loss/trauma conditions, the distributions of *depersonalization* were also different, over time. Approximately a half year after the distressing event, an emerging, unfamiliar sense of self within the dream seems to indicate a predicament of self-reorganization corresponding to the life-transition that follows loss and trauma. Given that depersonalization within the dream was rated the highest (in general) between 6 and 24 months following loss and trauma, the function of dreams during this period after loss or trauma seems particularly critical in attempts to understand whether these dreams exacerbate distress or whether they are transitional to post-traumatic growth (e.g., Tedeschi & Calhoun, 1996, 2004).

Moreover, independent of the measures of pre-dream waking reflective

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experiencing, a third reflective approach in addition to conceptual reflection and mindful attention (Welwood, 2000).

awareness, the effects of personal experiences in loss or trauma on the form and intensity of dream reflective awareness varied by dream type. Specifically, we found that, among dreamers who had experienced loss, transcendent dreams were more likely to involve lucid mindfulness than was the case for those who had experienced trauma. In contrast, among those who had experienced trauma, nightmares were less likely to involve lucid mindfulness than was the case for those who had experienced loss. The results for the loss groups are possibly linked to our previous study of impactful dreams during bereavement (Kuiken & Lee, in preparation). The late emergences of transcendent dreams—and the associated lucid mindfulness—may coincide with the emergence of lucid mindfulness within transcendent dreams in the present study. In contrast, for the trauma groups, it appears that nightmares may be incompatible with lucid mindfulness—and with the potentially transformative effects of that aspect of impactful dreaming.

A supplementary analysis also indicated that, independent of the loss/trauma conditions, lucid mindfulness (not lucid control or lucid ineffectuality) within the dream was associated with *decreases in waking rumination*, which is a form of coping strategy usually contributing to perpetuating psychological distress (e.g., Stroebe et al., 2007), but this pattern was only found in the *6-24 month* timeframe groups. Together with the effects of depersonalization on decreased mindfulness (in general), it seems plausible to conclude that, although awareness of one's own feelings, thoughts, and actions in the dream may become chaotic during the 6-24 month period after loss and trauma, the enhancement of explicit lucidity and mindful quality during dreaming may transform dreams' influence on waking life.

The negation of the "mediated continuity hypothesis" in this study suggests at least two possible explanations worthy of future research concerns: First, personal experiences of loss and trauma may have a direct effect on dream experiences without the vehicle of reflective awareness during wakefulness. If so, the possible self-regulatory function of dreaming awaits further systematic exploration. Second, the present study only used three kinds of scales to measure three primary concepts of waking reflective awareness (i.e., mindfulness, reflection, and rumination), and this may be a reason why we only obtained

modest support for the direct continuity hypothesis, but not for the mediated continuity hypothesis. We suggest that future studies may consider using multiple measures to capture the complexity and subtlety of waking reflective awareness (e.g., Dissociative Experiences Scale [DES; Bernstein & Putnam, 1986]; Phenomenology of Consciousness Inventory [PCI; Pekala, 1991a]; Self-Consciousness Scale [SCS; Fenigstein et al., 1975]; Dimensions of Attention Questionnaire [DAQ; Pekala, 1991b]; Kentucky Inventory of Mindfulness Skills [KIMS; Baer et al., 2004]; Absorption Scale [Tellegen & Atkinson, 1974]), which accordingly may provide a better basis for the comparison of reflective awareness between dreaming and waking experiences.

Reflective Awareness and Self-Transformative Effects of Dreams

In our assessment of the influence of dream reflective awareness on subsequent changes in waking reflective awareness, only a significant main effect was found (i.e., *depersonalization* during the dream was associated with subsequent *decreases in mindfulness* [Walach et al., 2006] during wakefulness). However, especially in contrast with no significant results revealing that dream type per se was associated with changes in waking reflective awareness, our finding has substantially supported the possibility that a reflective component during dreaming might be carried forward into wakefulness and could have a significant effect on waking reflective awareness as well. According to a recent empirical study on depersonalization, mindfulness, and childhood trauma (Michal et al., 2007), although their measures only involved daily waking life, the severity of depersonalization was found to be negatively associated with mindfulness. Thus we feel even more confident in addressing this cross-state relationship.

Depersonalization, a strange and unreal sense of the self, may be understood together with the concept of *derealization*, an altered way of experiencing or perceiving the world (e.g., Bernstein & Putnam, 1986). In other words, the experience and environment could be perceived as unreal or bizarre to the individual as well. We think that, during the dream, the feeling of

depersonalization and perhaps also derealization may indicate an emerging sense of personal changed/multiple states of being (e.g., different thinking states, changed feeling states) (Rossi, 1985). According to Rossi, although this form of reflective awareness has been considered the sixth level (the second highest) in the process of achieving full self-reflection, we do not agree with the approach of dividing self-reflection during dreams into different levels. Instead, we suggest that an emphasis on understanding the complexity and subtlety in patterns of dream reflective awareness will be preferable. Thus, regardless of Rossi's "levels," we consider that depersonalization within the dream might be a critical step toward self-transformation.[11] We think that this might seem to be a turbulent inner process, but it could lead to a positive change of fostering self-reorganization in the long run.[12] Our finding that depersonalization during the dream was associated with decreases in mindfulness after awakening (i.e., a possible short-term discordance) may become less puzzling from this point of view.

Research has indicated that posttraumatic stress disorder (PTSD) and depersonalization were not highly associated with each other as expected; instead, PTSD was found to be closely related to more serious pathological dissociation (e.g., dissociative identity disorder [formerly termed "multiple personality

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[11] This transition may be even more essential for self-transcendence, especially in some spiritual disciplines (e.g., Buddhism). Specifically, the dis-identification process during progression along the spiritual path may also involve the experience of depersonalization, but it certainly has a transcendental purpose. Research has shown that people with backgrounds in Transcendental Meditation experienced depersonalization regularly in their lives but had persistent feelings of contentment, without hindering normal social function (Castillo, 1990). However, whether this kind of depersonalization and the form of depersonalization experienced after a significant loss or trauma (especially during the dream) are the same in nature or not is still an open question, and whether different belief systems may alter the way depersonalization manifests its effects is also an important issue to be addressed in the future.

[12] This perhaps also echoes some research findings regarding the adaptive functions of dreams in regulating mood and coping with stress (e.g., Cartwright, Newell, & Mercer, 2001; Hartmann, 1998a). More specifically, past research has suggested that, by making new connections between current and previous emotional experiences within the dream, people who experienced loss or trauma were able to elaborate and come to a new understanding of their adverse life events in a therapeutic-like "safe place." A failure to work through this evolving process during dreaming (i.e., no elaboration, or no cessation of repetitive dream content) has been found to predict a maladaptive subsequent life. Analogous to these theories, our present findings of the alteration of depersonalization within the dream seem to reflect the unfamiliarity and novelty that dreaming may bring forward to the dreamer's life.

disorder"]) (Simeon & Abugel, 2006). There is even evidence that people who had experienced depersonalization during trauma developed fewer trauma-related symptoms afterwards than those without depersonalization during the traumatic events (Shilony & Grossman, 1993). Therefore, we think that depersonalization within the dream might be also play a role similar to this coping mechanism (by distancing oneself from the distressing experiences and negating their subjective nature), although how this process could actually contribute or might possibly impair the dreamers' lives (e.g., due to persistent use of this passive strategy) is still unknown to us.

However, in spite of the above possible positive implications for depersonalization within the dream, we should be more cautious about its potential negative effects. There has been substantial research indicating that depersonalization (considered to be a major dissociative symptom) after loss and trauma was related to psychopathology (Giesbrecht, Merckelbach, Kater, & Sluis, 2007; Harvey & Bryant, 1998; Moskowitz, Schafer, & Dorahy, 2008; Simeon & Abugel, 2006; Sims & Sims, 1998; Watson, 2001). There is also evidence that, depersonalization during the waking state is not only associated with decreased mindfulness (Michal et al., 2007), but also related to rumination (Simeon & Abugel, 2006; Wolfradt & Engelmann, 1999), and impaired abilities to direct the focus of attention (Guralnik, Schmeidler, & Simeon, 2000) as well. Thus, the issues of whether depersonalization during the dream could have long-term detrimental effects, and if it does, how frequently and intensely depersonalization would result in such negative effects on waking life, still need to be addressed in future research.

Limitations and Methodological Issues

Overall, there are four major limitations that warrant further consideration in future research. First, due to the restriction of course requirements and departmental policy, we could only ask participants to get involved in a single study, lasting no more than three hours. This is the main reason that we could only

obtain a single baseline measure of waking reflective awareness prior to participants' recording of impactful dreams. In addition, due to the research limitations and because of the unpredictability of an emerging impactful dream for each participant as well, we were not able to control the time between their participation in the first session (i.e., baseline measure) and their response to the post-test of waking reflective awareness, which was designed to be taken during the evening on the same day they recorded their impactful dreams. Thus, the timing issue might be one factor that potentially obscures the interpretation of our results. Perhaps, since the records regarding the actual time when participants finished a task are available, approaching this issue using statistical control may be feasible. If research resources allow administering multiple measures to obtain participants' consistent patterns of pre-dream waking reflective awareness, future studies may consider this as an alternative approach. If possible, together with the procedure of requesting multiple recordings of impactful dreams upon awakening, this further information may enhance our understanding of the potential mutual progression of waking and dreaming life. The strategy of gathering long-term dream diaries can also be used to reduce expectancy effects due to researchers' request for reporting an impactful dream in advance. Since participants may freely record all dreams they have and rate those dreams' influences after awakening, this method perhaps can obtain the dream reports that include the most natural occurrences of dream reflective awareness. However, one other issue that needs to be taken into account is that repeated exposure to the same research materials may result in learned effects.

Second, the measures used to identify the influences of dreams on waking life in this study may only reflect the transient or short-term effects. The answer to the question whether these short-term dream functions could foster long-term influences on waking life is still unavailable. A longitudinal research design may be a good way to delineate self-transformation over time and identify the sources of such changes. As discussed earlier, this approach is especially important for our understanding of depersonalization in dreams following loss and trauma. Also, there might be some sources (e.g., sleep quality, general patterns of sleep and

dreams, anxiety level, personality traits, individual differences in responses to distressing events, etc.) other than dream experiences per se that are also related to the report of dream aftereffects. Future studies may consider controlling these factors so that the findings with regard to dream function can be more confidently attributed to dream experiences.

Third, the development of our measures of dream reflective awareness is still in its preliminary stage. Although our five factors (i.e., lucid mindfulness, dual perspectives, depersonalization, intra-dream self-awareness, and willed appearances) were replicated across two studies (Lee et al. (2007) and the present study), further revision might still be necessary. We expect that, by increasing the number of items in each subscale and refining their descriptions, the reliability of these measures may be improved. Future studies conducted based on a larger sample and in different populations may be helpful to examine the stability of factor structure.

Finally, since the participants of this study were university students, we expected that they might not have reached the same state of mindfulness as long-term meditators (in terms of either frequency or depth), and they also might not have the same intense reflection during the dream as experienced lucid dreamers. The scarcity and low intensity of the phenomena we intended to investigate may result in restricted variance associated with our measures, and this perhaps explains why we did not obtain strong relationships on several measures between waking and dreaming reflective awareness, especially, for instance, between lucid mindfulness within the dream and mindfulness during wakefulness. We suggest that future studies consider investigating the same issues based on different populations (e.g., long-term meditators) who have more in-depth reflective awareness in their lives.

CHAPTER V
CONCLUSION

In conclusion, as an extension of our previous study on the influence of impactful dreams (Kuiken et al., 2006), the present study not only replicated most of the self-transformative effects of impactful dreams on the subsequent thoughts and feelings during wakefulness, but also established a new theoretical possibility for the continuity of reflective awareness between dreaming and wakefulness. Although some of the related patterns remain unclear and need further examination, the hypothesized continuity of reflective awareness between dreaming and waking states has been partly supported.

Implications

Past research has focused mainly on the incorporation of the individual's life component into dreams, suggesting either a direct continuity between dream content and waking concerns (Domhoff, 1996, 1999; Hartmann, 1998a; Schredl, 2003; Schredl & Hofmann, 2003) or a reversed continuity, for instance, the re-presentation of suppressed waking thoughts and wishes (Freud, 1913; Wegner, Wenzlaff, & Kozak, 2004) and the compensation for underdeveloped aspects of personality (Jung, 1974). These continuity hypotheses, which address the unidirectional effects of waking life on dream experiences, have their theoretical values, especially for understanding dream formation and the interpretation of meaning in dreams. Nevertheless, a possible bidirectional influence of dreaming and wakefulness and our understanding of dream function from this framework have not been empirically and systematically examined.

Hitherto, research that has directly addressed both the cognitive (or metacognitive) functions of dreaming and waking states is rather sparse; it is especially rare for the kind of studies which examine individual variations across both states. For instance, although research comparing dreaming and waking states has indicated that dreaming cognition and waking cognition contain certain

equivalent qualities and that dreaming cognition involves more extended and intricate forms of awareness than was previously understood (i.e., Kahan et al., 1997), whether dream reflective awareness and waking consciousness, on the individual level, show corresponding patterns remains unclear. A similar study on dreaming and waking metacognition (i.e., Kahan & LaBerge, 1996), which adopted an alternative analytical strategy to address the possible "within-subject correspondence" between dreaming and waking states, suggested that there was some evidence (i.e., internal commentary, focused attention, and self-reflection) for the continuity of cognition and metacognition between dreaming and waking experiences.

Kahn and Hobson's (2005) study attempted to compare the waking and dreaming thoughts within individual cases; however, it did not seem appropriate to achieve its goal by simply comparing the similarities and differences between participants' reported dream events that involved thinking and their hypothetical thinking responses of such dream events during wakefulness. Inevitably, such comparison processes superimposed a metacognitive component in the reports of waking cognition that potentially led to an overestimation of rational judgments upon highly impossible dream events and thoughts (according to waking standards). In addition, Kahn and Hobson's preference for a theory of state-dependent metacognition (i.e., unlike in the waking state, reflective awareness was deficient in dreams) may somehow reflect the insensitivity of their other methodological strategies (e.g., common dream reports collected from regular populations, the use of dichotomous questions, and the oversimplified conception of dream reflective awareness). Thus, the issues surrounding the conceptualization and measurement of dreaming and waking cognition, as well as reflective awareness, still await further clarification in future research.

As discussed by Blagrove (1996), the continuity of content across waking and dreaming experiences may at most explain the meaning of dreams. Whether dreams per se have adaptive function relies on the investigation of cognitive processes that occur in both states; in other words, understanding whether the dreaming state involves a comparable quality of waking consciousness is pivotal.

We believe that, along with our accumulated knowledge of reflective awareness and cognitive patterns involved in dreams, the puzzle of dream function may become easier to solve. Thus, we suggest that future research on the relationships between dreaming and waking experiences may shift the focus from the content-representation level toward a higher self-functional level.

Directions for Future Research

Perhaps, the understanding of dream reflective awareness (especially for explicit lucidity during the dream) and its influences on waking life requires further investigation from a phenomenological point of view. More specifically, while becoming explicitly lucid, at least two levels of awareness simultaneously exist in dreams. Even though lucid dreaming experiences may still be lived as real (Green & McCreery, 1994), the authenticity of previous (or ongoing) dreaming experiences immersed in the dream drama would be challenged by the emergence of higher level awareness. Therefore, the phenomenological horizon of lucid dreams seems like a combination of imaginary and actual spaces. LaBerge and DeGracia (2000) provided an interesting description for this special phenomenon: "lucid dreaming is less like a fantasy experience and more like an exploratory experience." It seems reasonable for us to assume that, when explicit lucidity emerges in the dream, the original felt sense of the self and its relations to the (dream) world becomes bizarre and paradoxical from the alternative perspective of the "Self (higher awareness)," who is reflecting on this situation. We think that this otherworldly encountering of a possible new life world might account for the self-transformative effects of lucid dreaming. However, in contrast, the implicit forms of dream reflective awareness may not exert dream function in the same way.

Thus, we suggest that the refining of the inquiry strategies to capture the diversity of dreaming and waking experiences remains an important step toward the understanding of their possible continuity. In addition, progress toward identifying the subtle patterns of dream reflective awareness, their antecedent

factors, and their influence on human life, is necessary to understand dream function. Based on the results of this study, we strongly believe that the differentiation of implicit and explicit forms of dream lucidity is the proper path since it has generated more significant, intricate findings than the strict dream lucidity paradigm (i.e., lucid vs. non-lucid dreams; or, measures based on a single "lucid control" dimension [e.g., Soffer-Dudek & Shahar, 2009; Watson, 2001]).

For instance, dual perspectives may actually contain different components and implications for different types of dreams and their dream aftereffects. In this study, nightmares were found to be somewhat related to dual perspectives within the dream (although this relationship was not statistically significant), and we think this might partly account for their associated vigilant responses after awakening. Perhaps, there are some other more intricate forms of dual perspectives that can better portray the external perspectives involved in transcendent dreams and existential dreams than currently measured concepts. Further research that addresses the question of multiple perspectives and perspective shifts in dreams may be critical for understanding this issue.

To facilitate our understanding of the variety of dream function, future research may consider diversifying the measures of self-transformative potential of dreams (for both changes in waking reflective awareness and changes in waking thoughts and feelings), as well as comparing the possible influences of different forms of dream reflective awareness based on different populations (e.g., comparisons between healthy adults, clinical patients with PTSD or schizophrenia, etc.; comparisons between people who have and have not experienced recurrent dreams; comparisons between people from Western and Eastern cultures). For example, lucid control dreams may be especially important for people who suffer from recurrent dreams to regain control in their waking lives; on the other hand, lucid mindfulness dreams may be particularly significant for Eastern people to resume a feeling of harmony in the face of daily events. We believe that this empirical approach may uncover the underlying facets of dream function exerted by different forms of reflective awareness within dreams.

Built upon these continuous efforts, we believe that clarifying the possible

relationships between reflective awareness within dreams and during waking life may help us to understand the significance of dreams (e.g., how dreams contribute to post-traumatic growth) and the nature of human consciousness. Past research has documented the therapeutic function of lucid dreams for treating nightmares (e.g., LaBerge, 1985; Tholey, 1988; Zadra, 1996; Zadra & Pihl, 1997); perhaps, a new look at the role of lucidity within dreams may not only turn the page on the pathological view on dreaming (Hobson, 2004; Yu, 2009), but also allude to the possibility of triggering insight (e.g., most importantly, increasing sense of reality) and self-knowledge for those who suffer from psychological disorders.

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APPENDIX A

LOSS/TRAUMA QUESTIONNAIRE *(LTQ)*

DEMOGRAPHIC INFORMATION

Please provide the following demographic information.

Your gender: M or F

Your birth date:
Month (mo.)
Day
Year (yr.)

Your primary (general) ethnicity:

0. **Aboriginal/First Nations**
1. **African (including Caribbean of African descent)**
2. **East Asian (e.g., Chinese, Vietnamese, Filipino)**
3. **South Asian (e.g., Pakistani, East Indian, Bangladesh)**
4. **European (e.g., French, German, Italian)**
5. **Hispanic/Latin-American (e.g., Chilean, Brazilian, Mexican)**
6. **Middle Eastern (e.g., Iraqi, Iranian, Egyptian)**
7. **Euro-North American (including Euro-Canadian)**
8. **Pacific Islander**
9. **Other**

LOSS/TRAUMA QUESTIONNAIRE
INSTRUCTION

THE FOLLOWING QUESTIONNAIRE ASKS ABOUT YOUR PERSONAL HISTORY OF LOSS AND TRAUMA. IT ASKS ABOUT:

- THE LOSSES AND TRAUMA YOU HAVE EXPERIENCED
- HOW LONG AGO EACH OCCURRED
- HOW INTENSELY EACH AFFECTED YOU

PLEASE REMEMBER THAT, IF YOU FEEL UNCOMFORTABLE FOR ANY REASON, YOU MAY OMIT ANY OF THESE QUESTIONS OR EVEN DECLINE TO COMPLETE THE ENTIRE QUESTIONNAIRE. IF YOU MAKE THIS CHOICE, YOU WILL STILL RECEIVE FULL CREDIT FOR YOUR PARTICIPATION IN THIS SESSION.

LOSS INVENTORY

At some time in their lives, most people face the loss (due to death) of a person who is close to them. We are interested in your history of experience with such loss.

INSTRUCTIONS: Please describe the losses that have affected you personally. For each type of loss indicated below (e.g., the death of your mother), there are four questions:

- In response to the first question, indicate whether you have experienced that type of loss.
- In response to the second question, **if you have experienced that type of loss**, indicate how long ago it occurred (if you have not experienced that type of loss, leave this item blank).
- In response to the third question, **if you have experienced that type of loss**, indicate what caused that death (if you have not experienced that type of loss, leave this item blank).
- In response to the fourth question, **if you have experienced that type of loss**, rate how intensely it affected you **when it occurred** (if you have not experienced that type of loss, leave this item blank).

If you have lost more than one individual per category (e.g., two grandparents have died), please respond according to the loss that most intensely affected you at the time it occurred.

---

1. I have experienced loss through the death of **my mother**
   0 = No 1 = Yes

2. The loss of my mother occurred:
   0 = Within the past one month
   1 = Within the past three months
   2 = Within the past six months
   3 = Within the past one year (12 months)
   4 = Within the past two years (24 months)
   5 = Within the past three years (36 months)
   6 = Within the past four years (48 months)
   7 = Within the past five years (60 months)
   8 = Within the past seven years (84 months)
   9 = More than seven years ago

3. The cause of my mother's death was:
   - 0 = A natural outcome of old age
   - 1 = The outcome of a long-term illness (e.g., cancer, muscular dystrophy)
   - 2 = The result of a sudden or unexpected illness (e.g., heart attack, aneurysm)
   - 3 = Accidental injury (e.g., car accident, house fire)
   - 4 = Injury due to another's negligence (e.g., drunk driver, medical error)
   - 5 = A civil, domestic, or industrial disaster (e.g., plane crash, industrial explosion)
   - 6 = A natural disaster (e.g., forest fire, hurricane)
   - 7 = Physical violence (e.g., drive-by shooting, armed robbery)
   - 8 = Suicide
   - 9 = Other (please describe _____)

4. Please describe the effect of the loss of your mother:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

5. I have experienced loss through the death of **my father**
   0 = No 1 = Yes

6. The loss of my father occurred:
   0 = Within the past one month
   1 = Within the past three months
   2 = Within the past six months
   3 = Within the past one year (12 months)
   4 = Within the past two years (24 months)
   5 = Within the past three years (36 months)
   6 = Within the past four years (48 months)
   7 = Within the past five years (60 months)
   8 = Within the past seven years (84 months)
   9 = More than seven years ago

7. The cause of my father's death was:
   0 = A natural outcome of old age
   1 = The outcome of a long-term illness (e.g., cancer, muscular dystrophy)
   2 = The result of a sudden or unexpected illness (e.g., heart attack, aneurysm)
   3 = Accidental injury (e.g., car accident, house fire)
   4 = Injury due to another's negligence (e.g., drunk driver, medical error)
   5 = A civil, domestic, or industrial disaster (e.g., plane crash, industrial explosion)
   6 = A natural disaster (e.g., forest fire, hurricane)
   7 = Physical violence (e.g., drive-by shooting, armed robbery)
   8 = Suicide
   9 = Other (please describe _____)

8. Please describe the effect of the loss of your father:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

9. I have experienced loss through the death of **my spouse/life partner**
   0 = No 1 = Yes

10. The loss of my spouse/life partner occurred:
    - 0 = Within the past one month
    - 1 = Within the past three months
    - 2 = Within the past six months
    - 3 = Within the past one year (12 months)
    - 4 = Within the past two years (24 months)
    - 5 = Within the past three years (36 months)
    - 6 = Within the past four years (48 months)
    - 7 = Within the past five years (60 months)
    - 8 = Within the past seven years (84 months)
    - 9 = More than seven years ago

11. The cause of my spouse/life partner's death was:
    - 0 = A natural outcome of old age
    - 1 = The outcome of a long-term illness (e.g., cancer, muscular dystrophy)
    - 2 = The result of a sudden or unexpected illness (e.g., heart attack, aneurysm)
    - 3 = Accidental injury (e.g., car accident, house fire)
    - 4 = Injury due to another's negligence (e.g., drunk driver, medical error)
    - 5 = A civil, domestic, or industrial disaster (e.g., plane crash, industrial explosion)
    - 6 = A natural disaster (e.g., forest fire, hurricane)
    - 7 = Physical violence (e.g., drive-by shooting, armed robbery)
    - 8 = Suicide
    - 9 = Other (please describe _____)

12. Please describe the effect of the loss of your spouse/life partner:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

13. I have experienced loss through the death of **a brother/sister**
0 = No 1 = Yes

14. The loss of my brother/sister occurred:
0 = Within the past one month
1 = Within the past three months
2 = Within the past six months
3 = Within the past one year (12 months)
4 = Within the past two years (24 months)
5 = Within the past three years (36 months)
6 = Within the past four years (48 months)
7 = Within the past five years (60 months)
8 = Within the past seven years (84 months)
9 = More than seven years ago

15. The cause of my brother/sister's death was:
0 = A natural outcome of old age
1 = The outcome of a long-term illness (e.g., cancer, muscular dystrophy)
2 = The result of a sudden or unexpected illness (e.g., heart attack, aneurysm)
3 = Accidental injury (e.g., car accident, house fire)
4 = Injury due to another's negligence (e.g., drunk driver, medical error)
5 = A civil, domestic, or industrial disaster (e.g., plane crash, industrial explosion)
6 = A natural disaster (e.g., forest fire, hurricane)
7 = Physical violence (e.g., drive-by shooting, armed robbery)
8 = Suicide
9 = Other (please describe _____)

16. Please describe the effect of the loss of your brother/sister:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

17. I have experienced loss through the death of **a grandparent**
0 = No 1 = Yes

18. The loss of my grandparent occurred:
0 = Within the past one month
1 = Within the past three months
2 = Within the past six months
3 = Within the past one year (12 months)
4 = Within the past two years (24 months)
5 = Within the past three years (36 months)
6 = Within the past four years (48 months)
7 = Within the past five years (60 months)
8 = Within the past seven years (84 months)
9 = More than seven years ago

19. The cause of my grandparent's death was:
0 = A natural outcome of old age
1 = The outcome of a long-term illness (e.g., cancer, muscular dystrophy)
2 = The result of a sudden or unexpected illness (e.g., heart attack, aneurysm)
3 = Accidental injury (e.g., car accident, house fire)
4 = Injury due to another's negligence (e.g., drunk driver, medical error)
5 = A civil, domestic, or industrial disaster (e.g., plane crash, industrial explosion)
6 = A natural disaster (e.g., forest fire, hurricane)
7 = Physical violence (e.g., drive-by shooting, armed robbery)
8 = Suicide
9 = Other (please describe _____)

20. Please describe the effect of the loss of your grandparent:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

21. I have experienced loss through the death of **a close friend** 0 = No
1 = Yes

22. The loss of my close friend occurred:
0 = Within the past one month
1 = Within the past three months
2 = Within the past six months
3 = Within the past one year (12 months)
4 = Within the past two years (24 months)
5 = Within the past three years (36 months)
6 = Within the past four years (48 months)
7 = Within the past five years (60 months)
8 = Within the past seven years (84 months)
9 = More than seven years ago

23. The cause of my close friend's death was:
0 = A natural outcome of old age
1 = The outcome of a long-term illness (e.g., cancer, muscular dystrophy)
2 = The result of a sudden or unexpected illness (e.g., heart attack, aneurysm)
3 = Accidental injury (e.g., car accident, house fire)
4 = Injury due to another's negligence (e.g., drunk driver, medical error)
5 = A civil, domestic, or industrial disaster (e.g., plane crash, industrial explosion)
6 = A natural disaster (e.g., forest fire, hurricane)
7 = Physical violence (e.g., drive-by shooting, armed robbery)
8 = Suicide
9 = Other (please describe _____)

24. Please describe the effect of the loss of your close friend:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

25. I have experienced loss through the death of **my child**

0 = No 1 = Yes

26. The loss of my child occurred:

0 = Within the past one month
1 = Within the past three months
2 = Within the past six months
3 = Within the past one year (12 months)
4 = Within the past two years (24 months)
5 = Within the past three years (36 months)
6 = Within the past four years (48 months)
7 = Within the past five years (60 months)
8 = Within the past seven years (84 months)
9 = More than seven years ago

27. The cause of my child's death was:

0 = A natural outcome of old age (not applicable)
1 = The outcome of a long-term illness (e.g., cancer, muscular dystrophy)
2 = The result of a sudden or unexpected illness (e.g., heart attack, aneurysm)
3 = Accidental injury (e.g., car accident, house fire)
4 = Injury due to another's negligence (e.g., drunk driver, medical error)
5 = A civil, domestic, or industrial disaster (e.g., plane crash, industrial explosion)
6 = A natural disaster (e.g., forest fire, hurricane)
7 = Physical violence (e.g., drive-by shooting, armed robbery)
8 = Suicide
9 = Other (please describe _____)

28. Please describe the effect of the loss of your child:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

29. I have experienced loss through the death of **another acquaintance (classmate, casual friend, pet, etc.)**

0 = No 1 = Yes

30. The loss of this individual occurred:
    - 0 = Within the past one month
    - 1 = Within the past three months
    - 2 = Within the past six months
    - 3 = Within the past one year (12 months)
    - 4 = Within the past two years (24 months)
    - 5 = Within the past three years (36 months)
    - 6 = Within the past four years (48 months)
    - 7 = Within the past five years (60 months)
    - 8 = Within the past seven years (84 months)
    - 9 = More than seven years ago

31. The cause of this individual's death was:
    - 0 = A natural outcome of old age
    - 1 = The outcome of a long-term illness (e.g., cancer, muscular dystrophy)
    - 2 = The result of a sudden or unexpected illness (e.g., heart attack, aneurysm)
    - 3 = Accidental injury (e.g., car accident, house fire)
    - 4 = Injury due to another's negligence (e.g., drunk driver, medical error)
    - 5 = A civil, domestic, or industrial disaster (e.g., plane crash, industrial explosion)
    - 6 = A natural disaster (e.g., forest fire, hurricane)
    - 7 = Physical violence (e.g., drive-by shooting, armed robbery)
    - 8 = Suicide
    - 9 = Other (please describe _____)

32. Please describe the effect of your loss of this individual:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

TRAUMA INVENTORY

At some time in their lives, many people face trauma, e.g., assault, car accidents. We are interested in your history of experience with such trauma.

INSTRUCTIONS: Please describe the traumas that have affected you personally. For each type of trauma indicated below (e.g., physical assault), there are three questions.

- In response to the first question, indicate whether you have experienced that type of trauma.
- In response to the second question, **if you have experienced that type of trauma**, indicate how long ago it occurred (if you have not experienced that type of trauma, leave this item blank).
    - Note: For two forms of continuing trauma (e.g., emotional abuse), you will be asked to indicate when the trauma began and how long it continued.
- In response to the third question, **if you have experienced that type of trauma**, rate how intensely it affected you **when it occurred** (if you have not experienced that type of trauma, leave this item blank).

If you have experienced more than one trauma fitting each category (e.g., two criminal victimizations), please respond according to the trauma that most intensely affected you at the time it occurred.

Below are definitions of some terms used in this section of the questionnaire:

- **Physical Assault:** Assault, incest, sexual assault, mutilation, physical abuse
- **Recurrent Physical Assault:** Repeated physical assault (as defined above)
- **Recurrent Emotional Abuse:** Repeated verbal aggression, humiliation, neglect, or isolation
- **Criminal Victimization:** Armed robbery, burglary, kidnapping, drive-by shooting
- **Negligent Injury:** Drunk driving resulting in physical harm, a serious car accident resulting in physical harm, inappropriate or negligent medical treatment resulting in physical harm
- **Civil, Domestic, or Industrial Disaster:** Serious fires, collapse of a structure (e.g., bridge), crash of a transportation system (e.g., plane, train), technological accident (e.g., exposure to radiation), work-related accident (e.g., explosion)
- **Cultural Violence:** War, genocide, terrorism, torture
- **Natural Disasters:** Earthquake, hurricane, tornado, avalanche, forest fire, flood
- **Other trauma:** e.g., life threatening illness, animal attacks, freak accidents

33. I have experienced **physical assault**
    0 = No 1 = Yes

34. This physical assault occurred:
    0 = Within the past one month
    1 = Within the past three months
    2 = Within the past six months
    3 = Within the past one year (12 months)
    4 = Within the past two years (24 months)
    5 = Within the past three years (36 months)
    6 = Within the past four years (48 months)
    7 = Within the past five years (60 months)
    8 = Within the past seven years (84 months)
    9 = More than seven years ago

35. Please describe the effect of this physical assault:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

36. I have experienced **recurrent physical assault**
    0 = No 1 = Yes

37. This recurrent physical assault *began*:
    0 = About one month ago
    1 = About three months ago
    2 = About six months ago
    3 = About one year (12 months) ago
    4 = About two years (24 months) ago
    5 = About three years (36 months) ago
    6 = About four years (48 months) ago
    7 = About five years (60 months) ago
    8 = About seven years (84 months) ago
    9 = More than seven years ago

38. This recurrent physical assault *occurred for how long*?
    0 = About one month
    1 = About three months
    2 = About six months
    3 = About one year (12 months)
    4 = About two years (24 months)
    5 = About three years (36 months)
    6 = About four years (48 months)
    7 = About five years (60 months)
    8 = About seven years (84 months)
    9 = More than seven years

39. Please describe the effect of this recurrent physical assault:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

40. I have experienced **<u>recurrent emotional abuse</u>**
    0 = No 1 = Yes

41. This recurrent emotional abuse *began*:
    0 = About one month ago
    1 = About three months ago
    2 = About six months ago
    3 = About one year (12 months) ago
    4 = About two years (24 months) ago
    5 = About three years (36 months) ago
    6 = About four years (48 months) ago
    7 = About five years (60 months) ago
    8 = About seven years (84 months) ago
    9 = More than seven years ago

42. This recurrent emotional abuse *occurred for how long*?
    0 = About one month
    1 = About three months
    2 = About six months
    3 = About one year (12 months)
    4 = About two years (24 months)
    5 = About three years (36 months)
    6 = About four years (48 months)
    7 = About five years (60 months)
    8 = About seven years (84 months)
    9 = More than seven years

43. Please describe the effect of this recurrent emotional abuse:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

44. I have experienced **<u>criminal victimization</u>**
    0 = No 1 = Yes

45. This criminal victimization occurred:
    0 = Within the past one month
    1 = Within the past three months
    2 = Within the past six months
    3 = Within the past one year (12 months)
    4 = Within the past two years (24 months)
    5 = Within the past three years (36 months)
    6 = Within the past four years (48 months)
    7 = Within the past five years (60 months)
    8 = Within the past seven years (84 months)
    9 = More than seven years ago

46. Please describe the effect of this criminal victimization:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

47. I have experienced **negligent injury**
    0 = No 1 = Yes

48. This negligent injury occurred:
    0 = Within the past one month
    1 = Within the past three months
    2 = Within the past six months
    3 = Within the past one year (12 months)
    4 = Within the past two years (24 months)
    5 = Within the past three years (36 months)
    6 = Within the past four years (48 months)
    7 = Within the past five years (60 months)
    8 = Within the past seven years (84 months)
    9 = More than seven years ago

49. Please describe the effect of this negligent injury:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

50. I have experienced **civil, domestic, or industrial disaster**
    0 = No 1 = Yes

51. This civil, domestic, or industrial disaster occurred:
    0 = Within the past one month
    1 = Within the past three months
    2 = Within the past six months
    3 = Within the past one year (12 months)
    4 = Within the past two years (24 months)
    5 = Within the past three years (36 months)
    6 = Within the past four years (48 months)
    7 = Within the past five years (60 months)
    8 = Within the past seven years (84 months)
    9 = More than seven years ago

52. Please describe the effect of this civil, domestic, or industrial disaster:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

53. I have experienced **cultural violence**
    0 = No 1 = Yes

54. This cultural violence occurred:
    0 = Within the past one month
    1 = Within the past three months
    2 = Within the past six months
    3 = Within the past one year (12 months)
    4 = Within the past two years (24 months)
    5 = Within the past three years (36 months)
    6 = Within the past four years (48 months)
    7 = Within the past five years (60 months)
    8 = Within the past seven years (84 months)
    9 = More than seven years ago

55. Please describe the effect of this cultural violence:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

56. I have experienced **natural disaster**
    0 = No 1 = Yes

57. This natural disaster occurred:
    0 = Within the past one month
    1 = Within the past three months
    2 = Within the past six months
    3 = Within the past one year (12 months)
    4 = Within the past two years (24 months)
    5 = Within the past three years (36 months)
    6 = Within the past four years (48 months)
    7 = Within the past five years (60 months)
    8 = Within the past seven years (84 months)
    9 = More than seven years ago

58. Please describe the effect of this natural disaster:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

59. I have experienced **some other form of trauma** (e.g., life threatening illness)

    0 = No 1 = Yes

60. This trauma occurred:
    0 = Within the past one month
    1 = Within the past three months
    2 = Within the past six months
    3 = Within the past one year (12 months)
    4 = Within the past two years (24 months)
    5 = Within the past three years (36 months)
    6 = Within the past four years (48 months)
    7 = Within the past five years (60 months)
    8 = Within the past seven years (84 months)
    9 = More than seven years ago

61. Please describe the effect of this other trauma:

No (or hardly any) effect on me	0	1	2	3	4	Extremely intense effects on me

Note: We are aware of the sensitive nature of the information that we just requested. Please inform the researcher if you wish to discontinue your participation or disallow the use of your responses at this (or any other) time.

APPENDIX B

RUMINATION-REFLECTION QUESTIONNAIRE *(RRQ)*[i]

Below is a series of statements describing everyday experience. For each statement, please rate the extent to which you **agree** or **disagree** that the statement describes your experience **during the last two weeks**. Indicate your level of agreement or disagreement by choosing one of the scale categories to the right of each statement. Please answer as honestly and spontaneously as possible, according to what actually reflects your experience rather than what you think your experience should be.

0 = strongly disagree
1 = disagree
2 = neutral
3 = agree
4 = strongly agree

1. My attitudes and feelings about things fascinate me.
2. Often I'm playing back over in my mind how I acted in a past situation.
3. Sometimes it is hard for me to shut off thoughts about myself.
4. I love analyzing why I do things.
5. I often love to look at my life in philosophical ways.
6. My attention is often focused on aspects of myself I wish I'd stop thinking about.
7. I tend to "ruminate" or dwell over things that happen to me for a really long time afterward.
8. I'm very self-inquisitive by nature.
9. Long after an argument or disagreement is over with, my thoughts keep going back to what happened.
10. I often reflect on episodes in my life that I should no longer concern myself with.
11. I love exploring my "inner" self.

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[i] "*Reflection*" subscale: 1, 4, 5, 8, 11, 12, 14, 16, 17, 20, 22, 24; "*Rumination*" subscale: 2, 3, 6, 7, 9, 10, 13, 15, 18, 19, 21, 23. Reverse-scored item: 12, 14, 15, 16, 17, 21, 23, 24. In participants' final task (evening session) following their impactful dreams, the instruction for this questionnaire was worded differently: "*Below is a series of statements describing everyday experience. For each statement, please rate the extent to which you **agree** or **disagree** that the statement describes your experience **TODAY**. Indicate your level of agreement or disagreement by choosing one of the scale categories to the right of each statement. Please answer as honestly and spontaneously as possible, according to what actually reflects your experience rather than what you think your experience should be.*"

12. Philosophical or abstract thinking doesn't appeal to me that much.
13. I often find myself reevaluating something I've done.
14. I don't really care for introspective or self-reflective thinking.
15. I don't waste time rethinking things that are over and done with.
16. Contemplating myself isn't my idea of fun.
17. I don't care much for self-analysis.
18. I always seem to be rehashing in my mind recent things I've said or done.
19. I spend a great deal of time thinking back over my embarrassing or disappointing moments.
20. People often say I'm a "deep," introspective type of person.
21. It is easy for me to put unwanted thoughts out of my mind.
22. I love to meditate on the nature and meaning of things.
23. I never ruminate or dwell on myself for very long.
24. I'm not really a meditative type of person.

APPENDIX C

MINDFUL ATTENTION AWARENESS SCALE *(MAAS)*[ii]

Below is a series of statements describing everyday experience. For each statement, please rate how **frequently** or **infrequently** you have had that experience **during the last two weeks**. Please answer as honestly and spontaneously as possible, according to what actually reflects your experience rather than what you think your experience should be.

0 = rarely
1 = very infrequently
2 = somewhat frequently
3 = very frequently
4 = almost always

1. I could be experiencing some emotion and not be conscious of it until some time later.
2. I break or spill things because of carelessness, not paying attention, or thinking of something else.
3. I find it difficult to stay focused on what's happening in the present.
4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.
6. I forget a person's name almost as soon as I've been told it for the first time.
7. It seems I am "running on automatic" without much awareness of what I'm doing.
8. I rush through activities without being really attentive to them.
9. I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.
10. I do jobs or tasks automatically, without being aware of what I'm doing.
11. I find myself listening to someone with one ear, doing something else at the same time.
12. I drive places on "automatic pilot" and then wonder why I went there.

[ii] All are reverse-scored items. In participants' final task (evening session) following their impactful dreams, the instruction for this questionnaire was worded differently: "*Below is a series of statements describing everyday experience. For each statement, please rate how **frequently** or **infrequently** you have had that experience **TODAY**. Please answer as honestly and spontaneously as possible, according to what actually reflects your experience rather than what you think your experience should be.*"

13. I find myself preoccupied with the future or the past.
14. I find myself doing things without paying attention.
15. I snack without being aware that I'm eating.

APPENDIX D

FREIBURG MINDFULNESS INVENTORY *(FMI)*[iii]

Below is a series of statements describing everyday experience. For each statement, please rate how **frequently** or **infrequently** you have had that experience **during the last two weeks**. Please answer as honestly and spontaneously as possible, according to what actually reflects your experience rather than what you think your experience should be.

0 = rarely
1 = very infrequently
2 = somewhat frequently
3 = very frequently
4 = almost always

1. I am open to the experience of the present moment.
2. I sense my body, whether eating, cooking, cleaning or talking.
3. When I notice an absence of mind, I gently return to the experience of the here and now.
4. I am able to appreciate myself.
5. I pay attention to what's behind my actions.
6. I see my mistakes and difficulties without judging them.
7. I feel connected to my experience in the here-and-now.
8. I accept unpleasant experiences.
9. I am friendly to myself when things go wrong.
10. I watch my feelings without getting lost in them.
11. In difficult situations, I can pause without immediately reacting.
12. I experience moments of inner peace and ease, even when things get hectic and stressful.
13. I am impatient with myself and with others.
14. I am able to smile when I notice how I sometimes make life difficult.

[iii] Reverse-scored item: 13. In participants' final task (evening session) following their impactful dreams, the instruction for this questionnaire was worded differently: "*Below is a series of statements describing everyday experience. For each statement, please rate how **frequently** or **infrequently** you have had that experience **TODAY**. Please answer as honestly and spontaneously as possible, according to what actually reflects your experience rather than what you think your experience should be.*"

APPENDIX E

SLEEP AND DREAM QUESTIONNAIRE *(SDQ)*

THIS SECTION IS DESIGNED TO ASSESS SOME ASPECTS OF YOUR SLEEP AND DREAMS. PLEASE READ EACH QUESTION CAREFULLY, AND THEN PROVIDE YOUR ANSWER USING THE SCALES PROVIDED FOR EACH ITEM. HERE IS HOW WE REFER TO DIFFERENT TYPES OF DREAM EXPERIENCE IN THIS QUESTIONNAIRE:

***ORDINARY DREAMS**: THIS TERM REFERS TO IMAGERY THAT IS AS VIVID AS WAKING EXPERIENCE AND THAT UNFOLDS IN A STORY-LIKE MANNER.*

***BAD DREAMS**: VERY DISTURBING DREAMS (USUALLY IN THE SECOND HALF OF THE NIGHT) THAT DO NOT AWAKEN YOU FROM SLEEP, BUT ARE NEVERTHELESS CLEARLY RECALLED.*

***RECURRING DREAMS**: THIS TERM REFERS TO THE EXPERIENCE OF HAVING TWO OR MORE DREAMS WITH THE SAME (OR A SIMILAR) THEME BUT WITH SLIGHTLY DIFFERENT CHARACTERS, PLACES, AND ACTIONS. (RECURRING DREAMS ARE SOMETIMES NIGHTMARES OR BAD DREAMS, BUT THEY ARE NOT NECESSARILY NIGHTMARES OR BAD DREAMS.)*

***NIGHTMARES**: VERY DISTURBING DREAMS (USUALLY IN THE SECOND HALF OF THE NIGHT) THAT AWAKEN YOU FROM SLEEP AND THAT ARE CLEARLY RECALLED LATER.*

***SLEEP TERRORS**: AWAKENINGS (USUALLY IN THE FIRST HALF OF THE NIGHT) ACCOMPANIED BY INTENSE PANIC AND SOMETIMES BY RECALL OF ONLY A BRIEF DREAM.*

***SLEEP PARALYSIS**: DREAMS THAT USUALLY OCCUR DURING THE TRANSITION BETWEEN SLEEPING AND WAKING AND ACCOMPANIED BY A TEMPORARY INABILITY TO MOVE OR SPEAK AND SOMETIMES BY THE VIVIDLY EXPERIENCED PRESENCE OF SOMEONE OR SOMETHING NEARBY.*

1. How often have you remembered **any kind of dream** during the **last 30 days**?
   - 0 = Not at all
   - 1 = Once
   - 2 = 2-5 times
   - 3 = 6-10 times
   - 4 = 11-15 times
   - 5 = 16-20 times
   - 6 = 21 or more times

2. How often have you experienced **bad dreams** during the **last 30 days**?
   0 = Not at all
   1 = Once
   2 = 2-5 times
   3 = 6-10 times
   4 = 11-15 times
   5 = 16-20 times
   6 = 21 or more times

3. How often have you experienced **recurring dreams** during the **last 30 days**?
   0 = Not at all
   1 = Once
   2 = 2-5 times
   3 = 6-10 times
   4 = 11-15 times
   5 = 16-20 times
   6 = 21 or more times

4. How often have you experienced **nightmares** during the **last 30 days**?
   0 = Not at all
   1 = Once
   2 = 2-5 times
   3 = 6-10 times
   4 = 11-15 times
   5 = 16-20 times
   6 = 21 or more times

5. How often have you experienced **night terrors** during the **last 30 days**?
   0 = Not at all
   1 = Once
   2 = 2-5 times
   3 = 6-10 times
   4 = 11-15 times
   5 = 16-20 times
   6 = 21 or more times

6. How often have you experienced **sleep paralysis** during the **last 30 days**?
   0 = Not at all
   1 = Once
   2 = 2-5 times
   3 = 6-10 times
   4 = 11-15 times
   5 = 16-20 times
   6 = 21 or more times

APPENDIX F

IMPACTFUL DREAM RECORDING

AN IMPACTFUL DREAM

Please describe this dream as exactly and as fully as you can remember it. Try to tell the dream story, from beginning to end, as if it were happening again (and without any interpretation or explanation). Your report should contain, if possible, a description of:

- All the objects, places, characters, and events in your dream;
- The entire sequence of actions and events, from the beginning to the end of your dream;
- Your moment-to-moment thoughts and feelings, from the beginning to the end of your dream; and
- Any unusual, incongruous, or implausible dream thoughts, feelings, objects, places, characters, or events

RECORD THE DETAILS OF YOUR DREAM HERE:

APPENDIX G

IMPACTFUL DREAMS QUESTIONNAIRE *(IDQ)*

The following words describe various feelings and emotions that can emerge while dreaming. Read each item and then rate to what extent you felt this way **during the concluding moment of this dream**, i.e., just before you awakened from this dream.

1.	scared	not at all	0	1	2	3	4 extremely
2.	downhearted	not at all	0	1	2	3	4 extremely
3.	ecstatic	not at all	0	1	2	3	4 extremely
4.	terrified	not at all	0	1	2	3	4 extremely
5.	in awe	not at all	0	1	2	3	4 extremely
6.	sad	not at all	0	1	2	3	4 extremely
7.	afraid	not at all	0	1	2	3	4 extremely

Please read each of the following statements carefully and, using the scale below, rate the extent to which the statement is true of your experience **during this dream**:

0 = Not at all true
1 = Slightly true
2 = Moderately true
3 = Quite true
4 = Extremely true

8. My dream involved unusual forms of or sources of light.
9. My dream involved vivid sensations of touch, movement, or body position.
10. In my dream I became aware of myself from the point of view of an observer, as if viewing myself from the outside.
11. My dream involved especially vivid sounds.
12. In my dream I experienced the spontaneous emergence of clear and distinct feelings.

13. In my dream there were sudden changes in the physical appearance of persons, places, or things (e.g., one person becoming another person, one place becoming another place).
14. My dream involved characters (including myself) with exceptional or even magical abilities (e.g., the ability to heal, to fly, to "know" others' thoughts).
15. I felt exceptionally vital, energetic, and alive.
16. My dream involved separation, rejection, or loss.
17. My feelings became especially intense just before I awakened.
18. My dream involved sensations of spreading warmth.
19. My dream involved vivid contrasts between light and darkness.
20. In my dream I was successful in attaining my goals.
21. In my dream I repeatedly tried to avoid harm to myself or others.
22. At times my movements in the dream were vigorous and energetic.
23. In my dream I felt tired, weak, or unable to move.
24. My movements in the dream were exceptionally well balanced and graceful (e.g., I was floating, gliding or flying).
25. In my dream I experienced a distinct shift in visual perspective (e.g., suddenly seeing things from above, suddenly seeing things as another character saw them).
26. In my dream I felt like crying—or I actually cried.

APPENDIX H

DREAM REFLECTIVE AWARENESS QUESTIONNAIRE *(DRAQ)*[iv]

Please read each of the following statements carefully and, using the scale below, rate the extent to which the statement is true of your experience **during this dream**:

0 = Not at all true
1 = Slightly true
2 = Moderately true
3 = Quite true
4 = Extremely true

1. During my dream, I became aware that I was dreaming and I allowed dream events to unfold without influencing them in any way.
2. On at least one occasion during my dream, I had the ability to "make things happen" in just the way I wanted them to.
3. For at least a moment during my dream, I explicitly reflected on the way I was acting within the dream.
4. During my dream, I became aware that I was dreaming but, although I tried, I was unable to influence the course of the dream.
5. For at least a moment during my dream, I explicitly reflected on my relationships with others.
6. For at least a moment during my dream, it seemed that my ongoing thoughts were just "not me."
7. For at least a moment during my dream, I explicitly reflected on the way I was feeling within the dream.
8. During my dream, I became split into two parts, one that was embodied, sensing, and reacting and another that was almost bodiless and yet reflective.
9. For at least a moment during my dream, I explicitly reflected on the way I was thinking in the dream.
10. On at least one occasion during my dream, I saw an image of myself as though I was watching myself in a movie.
11. For at least a moment during my dream, it seemed that I was not "in" (i.e., involved in) my ongoing feelings.
12. For at least a moment during my dream, I experienced myself from the perspective of another dream figure (or figures).

[iv] Each subscale includes the following items: (1) *lucid mindfulness*: 1, 16; (2) *dual perspectives*: 8, 10, 12, 15, 18; (3) *depersonalization*: 6, 11, 13; (4) *intra-dream self-awareness*: 3, 5, 7, 9; (5) *willed appearances*: 2, 14, 17; (6) *lucid control*: 19; (7) *lucid ineffectuality*: 4.

13. On at least one occasion during my dream, I found myself acting in a way that was so unlike me that I seemed like a stranger to myself.
14. On at least one occasion, when I thought about certain characters, places, or objects, they spontaneously appeared in my dream.
15. For at least a moment during my dream, I had a sense that I was outside of myself, watching myself do something or watching myself interact with someone.
16. During my dream, I became aware that I was dreaming.
17. On at least one occasion, when I thought about certain characters, places, or objects, I deliberately made them appear in my dream.
18. During my dream, I became split into two parts; I was able to experience the dream world from either perspective.
19. During my dream, I became aware that I was dreaming and I chose to change dream events in the way I wanted to.

APPENDIX I

POST-DREAM QUESTIONNAIRE *(PDQ)*[v]

Please read each of the following statements carefully and, using the scale below, rate the extent to which the statement is true of your experience **after this dream**:

0 = Not at all true
1 = Slightly true
2 = Moderately true
3 = Quite true
4 = Extremely true

1. After my dream, life seemed awe-inspiring in a way that could not be put into words.
2. After my dream, I felt refreshed, renewed, and revitalized.
3. After my dream, everything seemed timeless and spaceless.
4. My dream reminded me of events from my past.
5. After my dream, I felt a new sense of my spiritual potential.
6. After my dream, it seemed that I had moved to a higher reality.
7. After my dream, I felt sensitive to aspects of my life that I usually ignore.
8. After my dream, I had the sense that all things (people, animals, plants, and even objects) were alive.
9. My dream continued to influence my mood after I awoke.
10. After my dream, I felt an inner freedom, a sense of liberation from life's tangles and hindrances.
11. After my dream, I felt like changing the way I live.
12. When I awakened from my dream, I felt spiritually enlightened.
13. After my dream, I was prepared to find some kind of spiritual presence in nature, i.e., in people, in animals, or even in places and things.
14. My dream reminded me of spiritual possibilities that I seldom recognize or realize in my daily life.

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[v] Each subscale includes the following items: (1) *self-perceptual depth*: 4, 7, 9, 11; (2) *global spiritual potential*: 5, 6, 12, 13, 14; (3) *spiritual release*: 1, 2, 10; (4) *inclusive enlivenment*: 3, 8; (5) *existential disquietude*: 15, 16, 17.

In the items that follow, the term "**existential**" is meant to describe matters of "ultimate" concern, including spiritual conviction, religious belief, life's meaning, life's value, etc.

0 = Not at all true
1 = Slightly true
2 = Moderately true
3 = Quite true
4 = Extremely true

15. After my dream, I began to reconsider my **existential** convictions.
16. After my dream, doubt became a part of my core **existential** convictions.
17. After my dream, I began to value my **existential** doubts and uncertainties.

APPENDIX J

MASS TESTING QUESTIONNAIRES

-- Demographic and Background Information --

Age: _____

Gender: M or F

Your primary (general) ethnicity:

0. Aboriginal/First Nations
1. African (including Caribbean of African descent)
2. East Asian (e.g., Chinese, Vietnamese, Filipino)
3. South Asian (e.g., Pakistani, East Indian, Bangladesh)
4. European (e.g., French, German, Italian)
5. Hispanic/Latin-American (e.g., Chilean, Brazilian, Mexican)
6. Middle Eastern (e.g., Iraqi, Iranian, Egyptian)
7. Euro-North American (including Euro-Canadian)
8. Pacific Islander
9. Other

-- Dreams Questionnaire --

1. During the past 12 months, how often have you remembered your dreams?

   0 = never
   1 = less than once per month
   2 = about once per month
   3 = two or three times per month
   4 = about once per week
   5 = several times per week
   6 = almost every morning

2. Within the past 12 months, how often have you experienced dreams that continued to influence your waking thoughts and feelings even after you awakened?

   0 = never
   1 = less than once per month
   2 = about once per month
   3 = two or three times per month
   4 = about once per week
   5 = several times per week
   6 = almost every morning

-- Loss and Trauma Questionnaire --

The following questions concern your experience of loss or trauma. For some, recalling these events may be emotionally involving. Please remember that you may choose not to answer any questions in this survey.

3. Have you ever experienced loss through death of a family member, grandparent, spouse/partner, or close friend?

   0 = No
   1 = Yes

4. If you answered "Yes" to question #3 (above), how long ago did that death occur? (Note: if you have experienced more than one such loss, please indicate how long ago your most recent loss occurred.)

   0 = Within the past one month
   1 = Within the past three months
   2 = Within the past six months
   3 = Within the past one year (12 months)
   4 = Within the past two years (24 months)
   5 = Within the past three years (36 months)
   6 = Within the past four years (48 months)
   7 = Within the past five years (60 months)
   8 = Within the past seven years (84 months)
   9 = More than seven years ago

5. If you answered "Yes" to question #3, did that death occur as a result of physical assault, criminal victimization, life-threatening accident, or natural disaster?

   0 = No
   1 = Yes

6. Have you personally experienced trauma such as physical assault, criminal victimization, life-threatening accident, or natural disaster?

   0 = No
   1 = Yes

7. If you answered "Yes" to question #6, how long ago did that trauma occur? (Note: if you have experienced more than one such trauma, please indicate how long ago your most recent trauma occurred.)

0 = Within the past one month
1 = Within the past three months
2 = Within the past six months
3 = Within the past one year (12 months)
4 = Within the past two years (24 months)
5 = Within the past three years (36 months)
6 = Within the past four years (48 months)
7 = Within the past five years (60 months)
8 = Within the past seven years (84 months)
9 = More than seven years ago

8. If you answered "Yes" to question #3 (about loss) and/or item #6 (about trauma), are you willing to be contacted about the possibility of participation in research concerning loss and trauma?

0 = No
1 = Yes

Sometimes people who have experienced loss or trauma are unsure where they can go for help with the sometimes troubling aftermath of such events. For those individuals, the following telephone numbers, describing on-campus support services, may be of interest.

Student Counseling Services	492-5205
U of A Sexual Assault Centre	492-9771
Student Distress Centre	492-4357

APPENDIX K

BRIEFING 1

My name is __*Ming-Ni Lee*__ and I am a researcher in the Department of Psychology. I am here to offer you the opportunity to participate in a three-part research project concerning "Loss, Trauma, and Impactful Dreams." Part 1, which we will ask you to complete today, will take about 45-50 minutes; Part 2, which we will ask you to complete at home, takes about 60-70 minutes; and Part 3, a final debriefing session (in this laboratory), will take about 10-15 minutes. If you complete all three parts of this study, you will receive three research participation credits.

If, after I describe this study in more detail, you decide not to participate, or if you choose later to discontinue today's session, you will still receive one research credit if you complete an alternative educational activity. In that case, please remember that you will need to find a substitute for the two credits that you would have received if you had completed the entire study. In other words, you will need to sign up for other studies. *Is that clear?*

This consent form describes the objectives and expectations for Part 1 of our study. You will be presented a second consent form that describes the objectives and conditions for Parts 2 and 3 later during this session.

If you consent to participation in today's session, you will be asked to complete a series of questionnaires concerning your life style, as well as your personal experience with loss and trauma. In the first questionnaire, you will be asked to respond to some questions concerning cognitive, emotional, and attentional aspects of your life style. In the second questionnaire, you will be asked to answer questions concerning your experience of loss and trauma. More specifically, you will be asked to describe your history of loss and trauma, including how long ago each loss or trauma occurred and how much each loss or trauma affected you. You will also be asked to describe the ways in which an especially significant loss or trauma has continued to influence how you currently think and feel. Finally, you will be asked some questions about your dreams. As I just mentioned, completion of these questionnaires will take about 45-50 minutes.

At the end of your participation in this session, you will be given a debriefing, and you will receive one research credit. Then I will describe Parts 2 and 3 of this study and ask you whether you want to participate in those parts of this project, for which you will receive the other two research credits.

Please keep in mind that, throughout this study, we are interested in your beliefs, attitudes, feelings, and experiences—whatever they may be. We are not going to judge your responses in any way. Because we are interested in your personal

reactions, describing them may be emotionally involving. Therefore, we are taking several steps to ensure that you feel comfortable about participating.

First, your decision to participate in Part 1 of this study is entirely voluntary. You may decide not to participate, or, at any time during this session, you may decide to withdraw, in either case without penalty. That is, you will still receive one research credit if you complete an alternative assignment that we will provide. Completion of this alternative assignment will take approximately the same amount of time as would participation in this session. The alternative assignment is to (1) review the research materials and the written debriefing for Part 1 of this study and (2) write a paragraph summarizing the objectives of this study and their relation to the research procedures. To receive research credit for participating in today's session, this assignment must be completed before you leave today. Also, even after you have completed Part 1 of this study, you may choose to withdraw permission for us to use the information you have provided. If you reach this decision, please contact Dr. Don Kuiken (who is coordinating this project). At your request, he will immediately destroy all of the information you have provided.

Second, all the information you provide will be strictly confidential. Only Don Kuiken and the immediate members of his research team will have access to the responses you provide. Also, the results of this study may be presented at scholarly conferences or published in professional journals, but only in the form of group trends. Any report of this research will be in a form that precludes identification of yourself or any persons to whom you may refer during participation.

Third, all the information you provide in your questionnaire responses will remain anonymous. You will be given an arbitrary code number so that your responses can be coordinated with your responses on the questionnaires you complete later. However, the coded records of your responses will NOT contain any identifying information (e.g., names or student ID numbers). Only the consent form, which I will ask you to sign in just a moment, will contain identifying information and your arbitrary code number, and this form will be securely stored in a location within Don Kuiken's laboratory that is completely separate from the location in which your responses will be stored. So, if you decide later to withdraw your permission for research use of the information provided during today's session, you can contact Dr. Kuiken, who is solely able to delete from the records the information you provide during this session.

Please keep in mind that sometimes recalling distressing events, such as a significant loss or trauma, can be emotionally involving. Remember also that you may choose not to answer any of the items in this questionnaire or even to discontinue participation altogether. The researchers are aware of the sensitive nature of the subject matter addressed in this questionnaire and we will fully support your decision. In fact, we encourage you to decline participation in this portion of the study if you have recently experienced signs of acute distress, specifically: (1) if you have experienced psychological distress for which you have sought therapy or counseling or (2) if you have been so distressed that you

have lost weight, had trouble sleeping, taken continuing medication, or become dependent on alcohol to relieve that distress.

Given these guidelines, I hope you are willing to participate in Part 1 of this study. Do you have any questions?

If you are willing to participate, please confirm that for our records by reading and then signing the consent form. This form reviews the procedures and precautions that I just mentioned and then asks for your consent to use the information you provide for research purposes. Your signature on that form confirms that you are aware of the general nature of Part 1 of this study; that you understand the safeguards that I just described; and that you are consenting to research use of the information that you provide.

When you have completed all the questionnaires, please let me know that you are finished, and I will provide you with a written debriefing—and the opportunity to go on with Part 2 of this study.

Alright, you may begin.

APPENDIX L

Your Code Number: _____

Participant Consent (Part 1): Loss, Trauma, and Impactful Dreams

You are invited to participate in a research study concerning **Loss, Trauma, and Impactful Dreams**, which is being conducted by Dr. Don Kuiken of the Department of Psychology, University of Alberta. Overall, the three parts of this study will take you less than three hours to complete. Part 1, which we will ask you to complete today, will take about 45-50 minutes; Part 2, which we will ask you to complete at home, will take about 60-70 minutes; and Part 3, a final debriefing session (in a room here in the Psychology Department), will take about 10-15 minutes. If you complete all three parts of this study, you will receive three research participation credits.

If you decide today that you do not wish to participate, or if you decide later to discontinue today's session, you will still receive one research credit if you complete an alternative educational activity. In that case, please remember that you will need to find a substitute experiment for the two credits that you did not receive because you did not complete Parts 2 and 3 of this project. In other words, you will need to sign up for other experiments to be sure that you meet the Psychology 104/105 research participant requirement.

This consent form describes the objectives and expectations for Part 1 of this study. (You will be presented a second consent form that describes the objectives and conditions for Parts 2 and 3 later during this session.)

Objectives. If you consent to participation in today's session, you will be asked to complete a questionnaire concerning your life style, as well as your experience of loss and trauma. More specifically, in the first questionnaire, you will be asked to respond to some questions concerning cognitive, emotional, and attentional aspects of your life style. In the second questionnaire, you will be asked to describe your history of loss and trauma, including how long ago each loss or trauma occurred and how intensely each loss or trauma affected you. You will also be asked to describe the ways in which an especially significant loss or trauma has continued to influence how you currently think and feel. Finally, you will be asked some questions about your dreams. As indicated above, completion of these questionnaires will take about 45-50 minutes.

Voluntariness. Your decision to participate in Part 1 of this study is entirely voluntary. You may decide not to participate, or, at any time during the study, you may decide to withdraw, in either case without penalty. That is, you will still receive one research credit if you complete an alternative assignment that we will provide. Completion of this alternative assignment will take approximately the same amount of time as would participation in this session. The alternative assignment is to (1) read an article about a topic closely related to this research project and (2) answer short questions about that article. To receive research participation credit, this assignment must be completed before you leave this session.

Also, even after today's session, you may choose to withdraw your permission to use the information you have provided. If you reach this decision, please contact Don Kuiken (whose address and phone number are listed below). At your request, he will immediately destroy all of the information you provided during this session.

Your decision not to participate, to withdraw during participation, or to withdraw permission to use the information you provide will not affect your academic standing or access to services at the University of Alberta.

Confidentiality. The information gathered during your participation in this study will remain

confidential. Only Don Kuiken and the immediate members of his research team will have access to the responses you provide. Also, the results of this study may be presented at scholarly conferences or published in professional journals, but only in the form of group trends. Any report of this research will be in a form that precludes identification of yourself or any persons to whom you may refer during participation.

Anonymity. The information you provide also will remain anonymous. You will be given an arbitrary code number so that your responses on dream questionnaire can be coordinated with your responses on the questionnaires you complete later. However, the coded records of your responses on these tasks will NOT contain any identifying information (e.g., names or student ID numbers). Only this consent form will contain identifying information and your arbitrary code number, and this form will be securely stored in a location within Don Kuiken's laboratory that is completely separate from the location in which your responses will be stored. So, if you decide later to withdraw your permission for research use of the information provided during today's session, you can contact Don Kuiken, who is solely able to delete from the records the information you provide during this session. Please note that the consent forms and data records will be kept for up to five years, after which they will be destroyed.

Benefits and risks. This research can potentially contribute to our understanding of individual differences in life styles and in experiences of loss and trauma. However, recalling significant loss or trauma while you complete this questionnaire may be emotionally involving. Please remember that you may choose not to answer any of the items in this questionnaire or even to discontinue participation altogether. The researchers are aware of the sensitive nature of the subject matter addressed in this research project, and we will fully support your decision. Also, if you should experience any adverse effects during or following your participation, please let the experimenter know and contact Dr. Don Kuiken and/or Dr. Don Heth immediately.

Contact information. Also, if you have any questions or comments on this study, please contact Dr. Don Kuiken at the number or address below. Or, if you would like clarification of your rights as a research participant, please contact the representative of the Human Research Ethics Committee, Dr. Don Heth**,** at the number and address below.

Dr. Don Kuiken
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(780) 492-8760
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Dr. Don Heth
Human Research Ethics Committee
Department of Psychology
University of Alberta
Edmonton, AB T6G 2E9
(780) 492-2662
dheth@ualberta.ca

Signatures. Please sign below to indicate that you have read and understood the nature and purpose of this study. Your signature indicates your willingness to participate in this study and allows your responses to be used for research purposes.

_____ _ _____
Participant Signature Date

_____ _ _____
Researcher Signature Date

****

- If you have agreed to participate, please begin the questionnaires by following the instructions on the computer screen.
- If you have decided not to participate in this study, please let the researcher know so that she can provide you with the alternative educational activity.

APPENDIX M

DEBRIEFING (PART 1)

In Part 1 of this study, we are examining individual differences in people's experience of loss and trauma, including their dream patterns. The Loss/Trauma Questionnaire that you completed today is being used to examine differences in the psychological responses of those who have experienced loss or trauma. For example, previous research has indicated that people who have faced either loss or trauma may become depressed. However, research also suggests that the pattern of reactions following trauma, in some ways, contrasts with the pattern that follows loss. By asking about peoples' histories of loss and trauma, we want to further examine these contrasts.

One of our objectives is to explore whether the response to loss and the response to trauma vary along the same dimensions. The answers to a questionnaire like the Loss/Trauma Questionnaire can vary along a number of dimensions. As an analogy, consider, for instance, that length is a concept that entails one dimension, the area of a rectangle requires consideration of two dimensions, and the volume of a cube requires consideration of three dimensions. In psychology, some models of intelligence postulate two major dimensions (e.g., mathematical and verbal ability), some models of personality postulate five dimensions (neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience), and so on. However, little is known about the number of dimensions that are needed to capture the variation in people's responses to loss or trauma. One possibility is that the same dimensions are needed to describe people's response to loss and to their response to trauma. Another possibility is that different dimensions are needed to describe responses to loss than are needed to describe responses to trauma. By completing this questionnaire today, you, with a large number of other individuals who also complete this questionnaire, will be contributing to better understanding of the multi-dimensionality of response to loss and trauma.

Development of an improved multi-dimensional questionnaire for assessing response to loss and trauma will enable us to examine more precisely some hypotheses about these significant life events. For example, we have already learned that people who have experienced trauma are more likely than those who have experienced loss to report unwelcome intrusive thoughts. In contrast, people who have experienced loss are more likely to report vivid, but not necessarily unwelcome, reminiscences. One of the main objectives of this study is to learn more about when and for whom these different forms of "remembering" occur.

A second objective of the present study is to examine loss, trauma, and that form of "remembering" that occurs during dreams. That is why we asked you about the general character of your dreams (e.g., the frequency with which you recall dreams). Closer examination of your dreams will be the focus of Parts 2 and 3 of this study.

INTRODUCTION TO PART 2 OF THIS STUDY

Part 2 of this study will be completed using an on-line research system that you can access from home.

- Using this on-line system, your first task will be to record, immediately upon awakening, the first impactful dream that you experience after today's session. An impactful dream is one that continues to influence your thoughts and feelings even after you have awakened. To adjust this request to your particular dream life, we want you to record **the next dream you have that seems at least as impactful as your most impactful dream during the preceding four weeks (one month)**. Also, you will be asked to complete a questionnaire about your dream experience, including (a) your feelings and emotions during this dream; (b) various features of your experience of yourself and others in the dream; and (c) how your dream influenced your thoughts and feelings immediately after you awakened. Completion of this task will take about 45-50 minutes.

- Your second task, again using this on-line research system, will be completed on the evening following your impactful dream, i.e., **between 4:00 PM and midnight on that same day**. The questionnaires you complete at that time will ask you about your thoughts and feelings during the day. We will also ask you to complete a few other short questionnaires concerning aspects of your life style. These questionnaires will take about 15-20 minutes.

It is very important for the purposes of this research project that you complete both of these tasks at the times specified. Because the details of dreams are sometimes easily forgotten, it is important that you record your dream **as soon as possible** after it has occurred; for similar reasons, it is very important that you describe your thoughts and feelings during the day while they are still freshly in mind (**although after at least 6 hours have passed since you recorded your dream**).

Completion of both tasks in Part 2 will take about 60-70 minutes and, if you complete both, you will receive your second research participation credit.

However, as in Part 1, your decision to participate in Part 2 of this study is voluntary.

- If you decide right now not to participate in Part 2, you may discontinue without penalty. You will still receive your second research credit provided that you complete an alternative educational activity. Completion of this alternative assignment will take about the same amount of time as would participation in Part 2 of this study. The alternative assignment is to (1) read an article about a topic closely related to this research project and (2) answer short questions about that article. To receive research credit for Part 2, hard copy of this completed assignment must be submitted to Ming-Ni Lee

(mingni@ualberta.ca; 492-0036; P351 Biological Sciences Bldg) within two days of today's session.

- If you decide to discontinue participation after today's session but (before completing any of the tasks included in Part 2), you may do so without penalty. You can still receive your second research credit by completing the alternative educational activity. However, in this case, you will need to contact Ming-Ni Lee (mingni@ualberta.ca; 492-0036; P351 Biological Sciences Bldg) to obtain the materials for that assignment. Then, to receive your research credit for Part 2, these materials must be completed and returned to Ming-Ni Lee within two days of receiving them.

If you decide now or after today's session not to participate in Part 2, please remember that you will need to find a substitute experiment for the one additional credit that you would have received if you had completed the entire study. In other words, you will need to sign up for another experiment.

INTRODUCTION TO PART 3 OF THIS STUDY

If you complete any portion of the dream report and questionnaires in Part 2 of this study, you are expected to return to this laboratory for a 10-15 minute session during which you will receive a complete debriefing. If you attend this final session, you will receive your third research participation credit.

Returning for this session is especially important because we would also like you to give us your impressions of this study and what it was like to participate. Because of the sensitivity of the subject matter we are examining, it is very important that we be able to contact you and make arrangements for this session *regardless of whether you do or do not choose to complete all of the tasks described for Part 2*. For that reason, we want you to provide us with your email address so that we can make these arrangements (see the attached consent form). This is so important to us that, *if you do not feel comfortable about providing your email address for this purpose, we urge you not to participate in Parts 2 and 3 of this study*.

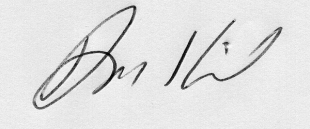
ISSUES AFFECTING BOTH PARTS 2 AND 3 OF THIS STUDY

The procedures used in Part 1 to ensure confidentiality and anonymity also apply to Parts 2 and 3 of this study. So, given these considerations, if you feel comfortable participating in Parts 2 and 3, please confirm that by reading carefully and then signing the attached consent form. Your signature on this consent form indicates that you are aware of the general nature of what we are asking you to do in Parts 2 and 3, that you understand the precautions we are taking regarding anonymity and confidentiality, that you are aware of your option to discontinue participation without penalty at any time, and that you are consenting to research use of the information you provide. Please remember that, if you have any questions about any aspect of this study, the experimenter will be glad to answer any of your questions.

Some people may become upset while reflecting on their dreams and their recollections of loss or trauma. If you would like to talk to someone about how you are feeling, please discuss this possibility with the researcher, but also be aware that Student Counselling Services (Room 2-600 SUB, 492-5205) and the Student Distress Centre (030-N SUB, 492-HELP) are available to help. Additional resources on campus may be found by visiting this web site:

http://www.uofaweb.ualberta.ca/counselling/on_campus_referrals.cfm

If you have any questions or concerns about the present research, please contact Don Kuiken (see below). If you have general questions, contact Dr. Tom Johnson (Director, Research Participation) at rpdirect@ualberta.ca or 492-2834, or Sharon Randon (Research Participation Coordinator) at rescred@ualberta.ca or 492-5689.



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APPENDIX N

Participant Consent (Parts 2 and 3): Loss, Trauma, and Impactful Dreams

Objectives. You are invited to participate in Parts 2 and 3 of this research study concerning **Loss, Trauma, and Impactful Dreams**.

PART 2

Part 2 will be completed using an on-line research system at home.

- Using this on-line system, your first task will be to record, immediately upon awakening, the first impactful dream that you experience after today's session. An impactful dream is one that continues to influence your thoughts and feelings even after you have awakened. To adjust this request to your particular dream life, we want you to record **the next dream you have that seems at least as impactful as your most impactful dream during the preceding four weeks (one month)**. Also, you will be asked to complete a questionnaire about your dream experience, including (a) your feelings and emotions during this dream; (b) various features of your experience of yourself and others in the dream; and (c) how your dream influenced your thoughts and feelings immediately after you awakened. Completion of this task will take about 45-50 minutes.
- Your second task, again using this on-line research system, will be completed on the evening following your impactful dream, i.e., **between 4:00 PM and midnight on that same day**. The questionnaires you complete at that time will ask you about your thoughts and feelings during the day. We will also ask you to complete a few other short questionnaires concerning aspects of your life style. These questionnaires will take about 15-20 minutes.

Completion of both tasks in Part 2 will take about 60-70 minutes and, if you complete both, you will receive your second research participation credit.

Voluntariness in Part 2. As in Part 1, your decision to participate in Part 2 of this study is voluntary.

- If you decide right now not to participate in Part 2, you may discontinue without penalty. You will still receive one research credit provided that you complete an alternative educational activity. Completion of this alternative assignment will take about the same amount of time as would participation in Part 2 of this study. The alternative assignment is to (1) read an article about a topic closely related to this research project and (2) answer short questions about that article. To receive research credit for Part 2, hard copy of this completed assignment must be submitted to Ming-Ni Lee (mingni@ualberta.ca; 492-0036; P351 Biological Sciences Bldg) within two days of today's session.
- If you decide to discontinue participation after today's session but (before completing any of the tasks included in Part 2), you may do so without penalty. You can still receive one research credit by completing the alternative educational activity. However, in this case, you will need to contact Ming-Ni Lee (mingni@ualberta.ca; 492-0036; P351 Biological Sciences Bldg) to obtain the materials for that assignment. Then, to receive your research credit for Part 2, these materials must be completed and returned to Ming-Ni Lee within two days of receiving them.

If you decide now or after today's session not to participate in Part 2, please remember that you will need to find a substitute experiment for the one additional credit that you would have received if you had completed the entire study. In other words, you will need to sign up for another experiment.

PART 3

If you complete any portion of the dream report and questionnaires in Part 2 of this study, you are expected to return to this laboratory for a 10-15 minute session (Part 3) during which you will receive a complete debriefing. By attending this final session, you will receive your third research participation credit.

Returning for this session is especially important because we would also like you to give us your impressions of this study and what it was like to participate. So, it is very important that we be able to contact you and make arrangements for this session *regardless of whether you do or do not choose to complete all of the tasks described for Part 2*. For that reason, we want you to provide us with your email address so that we can make these arrangements (see below). This is so important to us that, *if you do not feel comfortable about providing your email address for this purpose, we urge you not to participate in Parts 2 and 3 of this study*.

Confidentiality, and Anonymity. The procedures used to ensure confidentiality and anonymity in Part 1 will be used again in Part 2 of this study. (Please refer to the original Consent Form for those details.)

Benefits and risks. Your participation in this study can potentially contribute to understanding individual differences in dream experiences following loss and trauma. There are no foreseeable risks to this study, although describing your significant dreams may be emotionally engaging. If any risks should arise, the researcher will inform you and all other participants immediately. If you should experience any adverse effects, please contact Dr. Don Kuiken and/or Dr. Don Heth immediately.

Contact information. If you have any questions or comments on the study, or if you wish a clarification of your rights as a research participant, you can contact Dr. Don Kuiken or the Human Research Ethics Committee at the number and address below.

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Dr. Don Heth
Human Research Ethics Committee
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Your Email Address: In the space below, we would like you to provide us with your email address so that we can send you a reminder to record a dream that is as at least as impactful as your most impactful dream during the preceding months. Also, we would like to have your email address so that we can contact you to make arrangements for you to attend the final session in this study.

If you agree to participate, please provide your email address below. PLEASE PRINT CLEARLY, AND DISTINGUISH BETWEEN UPPER- AND LOWER-CASE LETTERS).

Your email address: _____

Note: The personal information requested on this form is collected under the authority of Section 33 (c) of the Alberta Freedom of Information and Protection of Privacy Act and will be used solely for the purposes described above.

Signatures. Please sign below to indicate that you have read and understood the nature and purpose of the study. Your signature, and provision of your email address (above), indicates your willingness to participate in this study and allows your responses to be used for research purposes.

_____ __ _____
Participant Signature Date

_____ __ _____
Researcher Signature Date

APPENDIX O

INSTRUCTIONS FOR THE ON-LINE RESEARCH SESSION (PART 2 AND 3)

You Participant Code Number: _____
Website: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Login ID: xxxxx
Password: xxxxxxxx

To Complete the Online Questionnaires at Home:

- When you have had an impactful dream (i.e., a dream that is at least as impactful as the most impactful dream you have had in the last month), please record your dream using the online questionnaires.
- Please do your best to respond to the online questionnaires ***when you are alone and will not be disturbed***.
- To begin, log on to the online dream questionnaire site (see the web site address above). Please be sure that you type in your "***Participant Code Number***" correctly when you sign in. This is the only way we can coordinate your responses across sessions and assign the research participation credits to you.
- To obtain your second research participation credit for this study, you need to complete this home session ***within one month***, starting today. If you do not have an impactful dream to record during this one-month period, please contact the researcher by _____ **at 11:00 PM, through email (see below)**.

After You Have Completed the online Questionnaires at Home:

- To obtain your third research participation credit, please arrange to return to the laboratory for Part 3 of this study. Using procedures described online (at the end of the questionnaires), you will be able to arrange a time and location with the researcher.

If you have any question regarding this study or have technical problems accessing the web pages, please feel free to contact the researcher:

Ming-Ni Lee
(780) 492-0036
mingni@ualberta.ca

Thank you for your participation!

APPENDIX P

DEBRIEFING

The objectives of this study are to (1) understand reflective awareness within different types of impactful dreams; (2) determine whether certain patterns of reflective awareness within impactful dreams occur more frequently following loss and trauma; and (3) examine whether different patterns of reflective awareness within impactful dreams influence subsequent waking thoughts and feelings.

Psychological research is considered optimal for establishing causality when it involves experiments in which (1) individuals are randomly assigned to conditions; (2) an independent variable is systematically manipulated; and (3) dependent variables are systematically assessed. However, in studies of the effects of dreams following loss and trauma, loss and trauma cannot be experimentally manipulated and neither can the occurrence of impactful dreams (e.g., nightmares). In these situations researchers often use what are called quasi-experimental designs in which the temporal order of events is carefully examined. So, in the present study we used a version of a pre-test/post-test design to examine the effects of impactful dreams following loss and trauma. Specifically, in the first research session we asked you to complete questionnaires that assessed aspects of reflective awareness in your waking life (the pre-test), and then on the day after you recorded your dream we asked you to complete these questionnaires again (the post-test). By examining changes from the pre-test to the post-test, we can assess whether your impactful dream influenced reflective awareness during wakefulness on the day following it. In this study, we are examining three different groups of individuals (those who have experienced loss, trauma, or neither loss nor trauma) in which we assess waking reflective awareness before an impactful dream (pre-test) and again after an impactful dream (post-test).

Research Background. Previous dream research has tended to consider dreams as unreflective and involuntary. But, a few researchers have paid attention to self-reflective possibilities in dreams. Previous research in our laboratory has suggested that different types of impactful dreams manifest different forms reflective awareness and, for that reason, have different effects on waking thoughts and feelings. However, little is known about the influence of loss and trauma on these dream types, on reflective awareness in those dreams, and on the effects these dream characteristics have on subsequent waking thoughts and feelings.

To approach these issues, the present research will assess different types of impactful dreams and different patterns of reflective awareness within those dreams. The three types of impactul dreams that we are studying are differentiable according to a profile of properties that include: (1) emotions and feelings; (2) goals and concerns; (3) movement style; (4) sensory phenomena; (5) dream transitions; (6) dream endings. For example, nightmares involve fear, harm avoidance, vigorous activity, auditory anomalies, physical metamorphoses, and

intense affect; what we call existential dreams involve sadness and anxiety, separation, inhibition (fatigue), light/dark contrast, affective shifts, and intense affect; and transcendent dreams involve ecstasy and awe, magical success, vigorous activity, extraordinary light, shifts in perspective, and intense affect.

Moreover, we have identified several qualitatively different patterns of dream reflective awareness, including (1) lucid mindfulness: a form of reflective awareness that involves awareness of dreaming while dreaming plus detached acceptance of ongoing thoughts and feelings; (2) dual perspectives: a form of reflective awareness involving two levels of self-representation, e.g., active self-participation in the dream and viewing oneself from an external perspective; (3) intra-dream self-awareness: a form of reflective awareness involving self-awareness within the dream (but not explicit awareness of dreaming); and (4) willed appearances: a form of reflective awareness that involves the emergence of dream objects or figures in response to the dreamer's wishes. (These are just examples.)

The Present Study. There is some evidence that different types of dreams and different patterns of reflective awareness follow loss and trauma. For example, there is evidence that existential dreams are common following loss; there is also evidence that existential dreams involve intra-dream self-awareness. So, the present research is designed (for the first time) so that we can examine whether the interactive combination of existential dreams *and* intra-dream self-awareness prompts changes in reflective awareness during subsequent wakefulness. (This particular possibility is just one among several that we are studying.)

To examine such possibilities, the first part of the present study was designed to gather information about your loss and trauma history, as well as to assess baseline levels of waking reflective awareness. In the second part of the study, we asked you to recall your dream experience and describe it as fully as possible, but we also asked you a series of specific questions:

- Some of these questions will enable us to classify *the type of impactful dream* that you reported (e.g., as a nightmare, existential dream, or transcendent dream);
- Some of these questions will enable us to determine *the type of reflective awareness* that you may have experienced in your dream (e.g., whether you were aware of dreaming while dreaming, intra-dream reflective awareness); and
- Some of these questions will enable us to assess post-dream waking reflective awareness, and, thus, to assess *the impact of your dream on waking thoughts and feelings*.

Please feel free to ask questions about any aspects of this research design.

We would like to thank you very much for participating. Without the help of people like you, we couldn't empirically address the most important questions in

psychology. Although we very much appreciate your help, we also have one request. **Please don't tell other people about what we asked you to do in this study because other students may participate in this study and it is very important that they approach it as you originally did, i.e., without expectations and without full awareness of our objectives.** This is important because it is the only way we can obtain objective and valid information.

The second part of this study involved thinking about impactful dreams, which are sometimes related to prior loss or trauma. Some people may become upset while reflecting on their loss or trauma and their recollections of dreams. If you would like to talk to someone about how you are feeling, please discuss this possibility with the researcher, but also be aware that Student Counselling Services (Room 2-600 SUB, 492-5205) and the Student Distress Centre (030-N SUB, 492-HELP) are available to help. Additional resources on campus may be found by visiting this web site:

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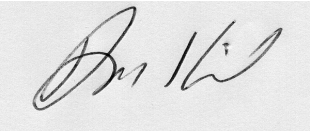
If you have any questions or concerns about the present research, please contact Don Kuiken (see below). If you have general questions, contact Dr. Tom Johnson (Director, Research Participation) at rpdirect@ualberta.ca or 492-2834, or Sharon Randon (Research Participation Coordinator) at rescred@ualberta.ca or 492-5689.



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APPENDIX Q

RELEASE FORM

I hereby give my consent to the inclusion, in subsequent published or presented reports, of anonymous quotations from:

the dream report that I provided in Part 2 of this study

I understand that any quotations will be in a form that precludes identification of myself or anyone to whom I referred in this study.

I understand that at any time I may withdraw my permission to the material that I provided during my participation in this study.

My signature below indicates my agreement to these conditions.

_____ Name (please print)

_____ Signature

_____ Date

_____ Signature of researcher