

Dreams and their relationship with waking emotion

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Fascination with the meaning of dreams goes back millennia. Ancient Egyptians imbued dreams with transcendental meaning and power, and would discuss them with their priests. In the Old Testament, Joseph interprets dreams as prophetic of God's intentions. In Native American culture, dreams are seen as a portal to higher awareness beyond the conscious mind, and hence as a form of life guidance. In the 20th century, Freud proposed that dreams represent unconscious desires or wishes, while Jung suggested that dreams are communications about problems that the conscious mind is unaware of, through the language of archetypal figures and stories.

The scientific study of dreams, undertaken from a cognitive perspective since the 1960s, suggests that dreams do indeed have meaning, but in a more quotidian way than the ancients or early psychoanalysts proposed. The 'continuity hypothesis' suggests that dreams often reflect or represent current or recent waking experiences, particularly waking *emotions* (Malinowski, 2012).

Trauma and nightmares

Cognitive theorists have quantified the dream world through laboratory-based studies, where participants are woken from different sleep stages throughout the night, reporting any dreams they recall. Independent judges then analyse the content of dreams. One of the most important findings to emerge from this widely used approach was that from 1000 dream reports by the general population, 80 per cent of all reported emotions were negative (Domhoff, 1996). Independent studies have similarly found that dream content tends to be negative (Nielsen et al., 1991).

One of the most influential researchers to examine how dreams relate to waking emotions was Ernest Hartmann, who summarised his decades-long research

in his 2014 book *The nature and functions of dreaming*. His research into the dreams of post-traumatic stress disorder (PTSD) and trauma patients led him to propose that dreaming about an emotion experienced in real life allows that emotion to be integrated with similar emotional memories, preparing the dreamer for future experiences of the emotion. Hartmann further argued that the current dominant emotion in waking life is represented in dreams metaphorically through the most striking or compelling central image. The dream then interweaves the dominant emotion with

other images and memories that elicit similar emotions, providing a safe context for the emotion to appear and be integrated into memory.

Nightmares of those who have suffered a traumatic event typically include remembered or symbolic images that elicit fear,

such as drowning, falling, feeling unable to act as one's house burns, or being chased and unable to get away. Some dreams involve re-experiencing the emotionally traumatic event, or a similar event (for example, a car crash or war trauma).

While these nightmares are no doubt unpleasant, the research programme of Rosalind Cartwright (1991, 2010) suggests that negative dreams following negative events may be conducive to recovery from trauma. People with depression who had negative dreams which pulled together different memories, had improved mood compared to those who didn't have negative dreams. In a study of divorcees, those who were not depressed had more dreams about their ex-spouse than divorcees who showed signs of depression. Cartwright proposed, like Hartmann, that dreams regulate negative emotions by matching them with memories of similar emotions.

The above-mentioned bias to have more negative dreams mirrors the dominance of negative emotion in waking life, where attention is drawn preferably to negative stimuli over positive stimuli. For example, people spend longer looking at negative photographs than positive photographs (Fiske, 1980), and show

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better recognition memory for negative information over positive information (Baumeister et al., 2001).

So, could it be that dreams are predominantly negative because our conscious waking life is drawn to negative stimuli and memories? Have we found the answer that the Ancient Egyptians, Christians, Native Americans and psychoanalysts have

sought for so long? Do we now know why we have those vivid night-time experiences and what they mean? More recent dream research using different methodologies has not replicated this negativity bias (St-Onge et al., 2005; Kahn & Hobson, 2002), suggesting that it may not be so simple.

Intense waking emotions

Dream diary methodology typically requires participants to write their dreams into a diary each morning over a 14-day period, as well as waking life events and the emotions attached to them. Unlike in laboratory-based dream methodology, participants write down the dreams they remember in naturalistic conditions without waking up on cue to do so during the night.

In one dream diary study, the emotional intensity of waking life events predicted whether they would be incorporated into dreams, whereas the emotional negativity did not (Schredl, 2006). In another study, waking life events that were incorporated into dreams were more emotional, but not more stressful, than experiences that were not incorporated into dreams (Malinowski & Horton, 2014). This suggests that it is not negative emotions, but intense emotions of any tone, that are more likely to appear in dreams. The authors argue that dreams may help facilitate mastery and control over affectively arousing memories, but acknowledge that it may simply be easier to recall intensely emotional dreams than less



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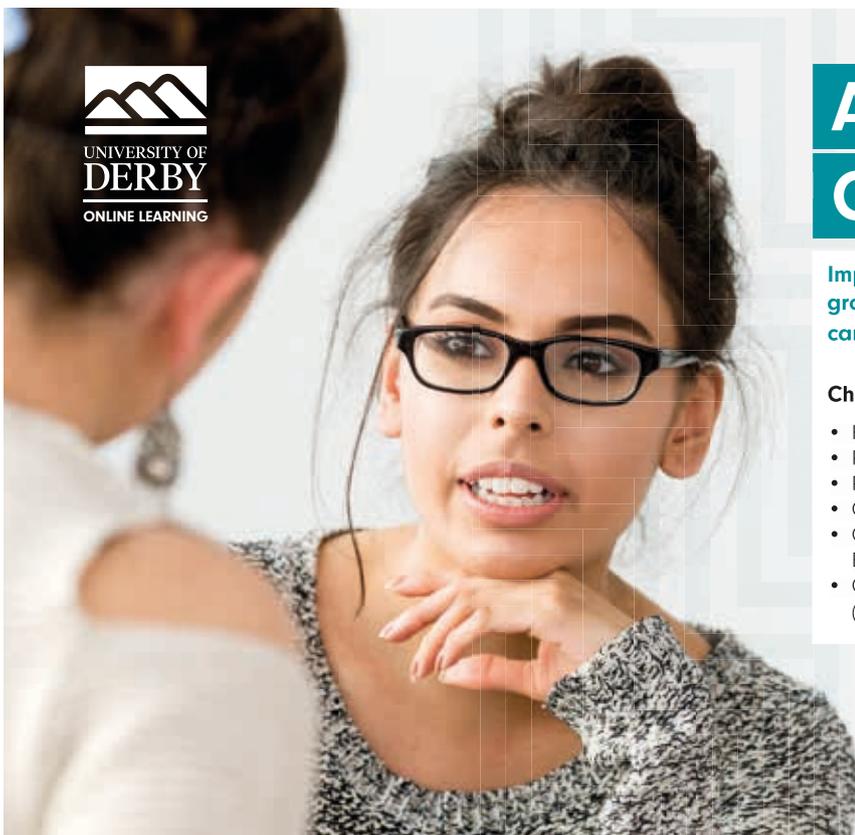
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emotional ones.

The emotional assimilation theory of sleep and dreaming (Malinowski & Horton, 2015) proposes that intensely emotional waking life experiences and feelings, whether positive or negative, are activated during sleep and incorporated into dreams via imaginative processes such as metaphor generation and the association of disparate memories. This process serves many functions, including: the incorporation of the intense emotion into the wider memory schema; creativity and insight in relation to emotional challenges; and the amelioration of the intensity of the emotion attached to a specific memory.

A discrepancy

So why do some theories point to negative emotions and others to intense emotions when it comes to what determines the content of dreams? This may be down to differing methods of data collection and analysis (Schredl, 2002). There is a clear difference in methodology: earlier studies highlighting the



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role of negative emotions have principally adopted laboratory-based methods with independent judges of emotion content while studies highlighting intense emotions have primarily adopted home-based self-reported dream diaries. A directed investigation to find out whether this makes a difference showed found that independent judges overestimate negative emotions and underestimate positive emotions compared to self-reports (Schredl & Doll, 1998). This suggests that the negativity bias in earlier work is a methodological artefact.

The dreamer's age is also a factor in the incorporation of emotions into dreams, with younger women reporting more negative emotions compared to older women (St Onge et al., 2005; Blick & Howe, 1984). In our recent research, funded by the BPS Undergraduate Assistantship Scheme, negative waking life emotion was related to negative dream tone in adults under 40, but to dream intensity in those over 40 (Petrov, Robinson & Malinowski, 2019). These findings, pending replication, suggest that waking emotion is encoded into dreams in different ways according to age.

Older adults also dream less often than younger adults. This could explain why for older adults negative waking life emotion is related to the intensity, but not the negativity, of a dream: for them there might be more emotional material to be processed within a single dream and there might be a larger intervening effect of memory and unconscious processing. Conversely, for younger adults whose negative waking life affect is related to negative dreams, but not intense ones, there might be less material to process at any time and smaller intervening effects. It is as though the emotional language of dreams becomes more disguised as we get older.

Key sources

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Making dreams conscious

In summary, we don't yet know with certainty why it is that some dream theories and research studies point towards negative emotions being incorporated in dreams, while other theories and studies conclude that intense emotions end up in our dream life. It is likely that both are true, for both negative and strong feelings create challenges that require processing and integration – and this is certainly a task that dreams are suited to helping with. Furthermore, it may be that as people age, the focus of dreams shifts from negative to intense emotions.

What we can be sure of is that dreams reflect our waking emotional states and help us, at least in part, to process those that have the potential to disturb or disrupt our wellbeing. The imagery of dreams is not some strange and mysterious language that can only be decoded by an expert, but rather a metaphorical or direct representation of what concerns us emotionally in our waking life. To consciously recall and consider our dreams is to indirectly explore our recent negative or intense waking emotions, which may lead our attention to the most salient and important concerns in our lives.