

The Realities of Dreaming: A Discovery Through Interdisciplinary Lens

Brianna Liu

University of Southern California

“I talk of dreams; which are children of the idle brain, begot of nothing but vain fantasy; which is as thin of substance as air and more inconstant than the wind”. Much like Shakespeare himself, some of us likely also hold this very sentiment regarding dreams’ random nature. From flying across the open skies to failing a midterm or being chased by frightening creatures, it is no wonder they may believe that dreaming is a random jumble of fantasies, creating novel realities in our minds with no practical function. However, with the scientific advancements of sleep and dream studies in recent years, researchers have helped individuals understand more about dreams than ever before. According to WebMD, dreaming occurs primarily within the rapid eye movement (REM) phase of our sleep cycle, when the brain is most active. This state of consciousness, characterized by sensory, cognitive, and emotional experiences, can happen approximately 4 to 6 times and varies from a few minutes to over half an hour in duration throughout one’s sleep. Using this substantial connection found between dreams and REM sleep, much of scientists’ current knowledge on dream significance has resulted from exploring the effects of REM sleep deprivation, or dream deprivation. Despite various theories from many scholars, there is yet to be a singular answer as to why humans dream during sleep. This suggests that dreaming might instead hold holistic benefits that extend beyond just physiological or health improvements; in fact, it may also possess the power to positively influence the trajectory of individuals' lives and ultimately, even the world.

Perhaps the most apparent benefit of dreaming is its ability to maintain homeostasis and stabilize physiological health during waking hours. Humans’ fundamental, physiological need for dreaming was first demonstrated in a renowned 1960 clinical study by ‘father of sleep medicine’, Dr. William Dement. After investigating the effect of dream deprivation on human subjects, he discovered that forced awakenings interrupting REM sleep progressively increased attempts for dreaming upon return to sleep, and subsequently elevated participants’ dream time by 50 percent (Dement, 1960). This innately induced tendency to obtain and remain in REM sleep following dream deprivation, now known as REM rebound, most likely occurs because dreaming plays a crucial role in

our health. Dream specialist Dr. Rubin Naiman, a Fellow in the American Academy of Sleep Medicine, further supports this idea with current findings from animal and human studies that reveal “many of the health concerns attributed to sleep loss result from a silent epidemic of REM sleep deprivation” (Naiman, 2017). These concerns include increased inflammatory responses and sensitivity to pain; risks for obesity, diabetes, dementia, Alzheimer’s disease, cardiovascular disease, and depression (Naiman, 2017). Based on increasing evidence substantiating the negative health consequences associated with REM/dream deprivation, it is logical to infer dreams as crucial factors that prevent diseases and promote an internal steady-state, which would mediate prolonged stability of physical health.

Once a person’s physiological needs are met, they can then advance toward obtaining psychological self-actualization from dreams in the form of conflict resolution and personal growth. For this to happen, individuals must first attribute important meaning to their dreams and consequently act upon those beliefs. Although seemingly unrealistic, an overwhelming majority of people genuinely uphold the Freudian theory that dreams disclose meaningful insight about themselves and the world. Drs. Carey Morewedge and Michael Norton, psychologists at Carnegie Mellon and Harvard University, surveyed students attending a top university in the U.S., South Korea, and India about general dream beliefs. They found that a respective 56%, 64.9%, and 73.8% of participants “selected the Freudian theory as most true, far more than any of the other [dream theories]” (Morewedge & Norton, 2009). Clearly, the majority support for hidden meaning from dreams is widespread across different cultures, even among the most educated. Furthermore, some people may value dream content more seriously than similar thought content during waking hours. In another survey, the same researchers compared the impact of dreamed events versus conscious thoughts on intentions, and participants reported plane crash dreams being more likely to “affect their travel plans than a conscious thought of a crash or a warning from the federal government” (Morewedge & Norton, 2009). In fact, a dream of a plane crash was expected to exceed an actual plane crash in its impact on their decision-making (Morewedge & Norton, 2009). This example demonstrates how certain dreams – especially ones with unsettling content – often lead to self-interpretation, which consequently engenders individuals to change their subsequent waking behaviors accordingly. When these perceptions are applied to common dreams regarding personal conflicts such as failures, individuals may also be motivated to resolve them in their waking lives. For instance, a 2014 observational study by distinguished French cognitive researchers Dr. Arnulf et. al revealed that dreams depicting failure before a medical school entrance exam in France were positively correlated with optimized performance on the actual test. The other 510 students who also dreamt similarly distressing dreams all received better grades than the 185 students who did not, and the grades

were proportional to the frequency of exam dreams (Arnulf et al., 2014). The researchers suggest this may be due to the possibility that students “doubled efforts to rehearse [their] lessons” after experiencing stressful dreams where it was “impossible to remember a single thing”, as one student disclosed (Arnulf et al., 2014). Thus, dreams with unsettling or conflicting content may prompt individuals to seek conflict resolution and improve their actions after waking up, leading to personal growth if those changes are for the better.

These physical and psychological benefits of dreaming place individuals in the best possible condition to further improve their lives, not only in terms of health but also socioeconomic mobility. Firstly, while many can agree that sleep boosts overall work productivity during waking hours, much of the contribution comes specifically from the memory consolidation that occurs throughout REM sleep, according to recent experimental evidence from the high-impact journal *Neuron* (Kumar et al., 2020). Dr. Rubin Naiman also highlights that the occurrence of REM sleep is predominantly concentrated in the final hours of sleep, typically in the early morning for most individuals. As a result, when one fails to obtain a full seven or eight hours of sleep, the opportunity for REM sleep and its associated benefits in dreaming will be diminished (Naiman, 2017). The relationship between sleep and dreaming reveals that as people receive enough hours of sleep, they have the potential to dream more and consequently increase their overall health and memory-based intelligence. This can help explain why better quality, longer duration, and greater consistency of sleep have strong correlations with increased academic performance (Okano et al., 2019). With success in academics, individuals are more likely to attain greater likelihood of upwards socioeconomic mobility (Haveman & Smeeding, 2006). Such benefits are also advocated by members of the elite class who credit sleep as a crucial contributor to their major success. Jeff Bezos, the second wealthiest man in the world and the CEO of leading online enterprise Amazon, hardly ever burns the midnight oil despite his hectic work schedule. “Eight hours of sleep makes a big difference for me, and I try hard to make that a priority,” he tells behavior change technology enterprise ThriveGlobal in an interview (Bezos, 2017). Billionaire and Microsoft founder Bill Gates is on Bezos’ side, admitting in his personal blog that “[his] all-nighters, combined with almost never getting eight hours of sleep, took a big toll” on him during his early Microsoft days, as he “wasn’t as sharp when [he] was operating mostly on caffeine and adrenaline” (Gates, 2019). Their sleep habits are examples of dreaming’s positive impact on individual productivity and success, which assemble altogether in a virtuous cycle. In stark contrast, people who get very little sleep and are deprived of vital dream periods each night are not doing so well financially. 44-year-old web developer Andy confesses to *The Guardian*, “Insomnia has impacted my career – I can’t move upwards... I previously had problems in a larger organization, and ultimately had to leave” (The Guardian). These experiences instead

illustrate a vicious cycle, starting with reduced dreaming that leads to less productivity and, consequently, restrained socioeconomic mobility. The juxtaposition of individuals who receive limited amounts of sleep with those who prioritize several extra REM stages during their sleep cycle emphasizes dreams' potential to aid in socioeconomic mobility.

As dreams progressively advance individuals' personal lives over time, they may even provide a select few with the potential to positively change the course of history overnight. Dreams play an especially crucial yet overlooked role in the unpredictability of human history, fostering creativity and innovation that sometimes may not be achieved anytime other than during sleep. According to historical records, numerous individuals were influenced by ideas manifested in their dreams which resulted in breakthrough discoveries. Among the most notable is Russian chemist Dmitri Mendeleev's invention of the periodic table of elements in 1869. His experience was recorded in an article by fellow Russian chemist B.M. Kedrov, where Mendeleev recounts, "In a dream I saw a table where all the elements fell into place as required. Awakening, I immediately wrote it down on a piece of paper" (Kedrov, 1967). A similar but more prevalent creation in our current world, Google, also resulted from a dream. In a 2009 University of Michigan commencement address, co-founder Larry Page describes how he was struck by an idea for the internet search engine after awakening from a dream, in which "[he] was thinking: what if we could download the whole web, and just keep the links...[he] spent the middle of that night scribbling out the details" (Page, 2009). Now, the periodic table is found on the first page of virtually every chemistry textbook, and Google is the most popular website utilized worldwide. In addition to science, these dream discoveries also encompassed music. Many music fans consider The Beatles to be one of the greatest artists of all time, and for valid reasons. According to music historian David Simonelli, The Beatles ushered in the "original golden age" of rock 'n' roll; their continual experimentation and inventiveness made songs that "started a revolution in the pop music industry" (Simonelli, 2012). In particular, their song "Yesterday"—arguably the most impactful song in history based on its global record number of cover versions—was composed by member Paul McCartney after hearing the melody in a dream. McCartney co-writes in his book, "I just fell out of bed, found out what key I had dreamed it in...and I played it [on the piano]" (Coleman, 1996). But if such dreams had never occurred, needless to say, our world would be completely different: imagine being unfamiliar with the composition of salt or water, having to search for information in encyclopedias and books, or being unable to recognize the songs loved by our generation. While historical changes are not solely limited to these instances, they are sufficient to signify the immense power held by dreaming to shape our world.

With the continued occurrence of dreaming during sleep, humans may continue experiencing its associated positive impacts in the form of

improved overall health and life quality. Despite increasing evidence supporting dream benefits, however, the majority of people fail to even receive enough sleep for this to happen. In a world where performance and achievement are invaluable, schools and workplaces often encourage sacrificing sleep to yield seemingly higher productivity, without realizing that it actually provides more harm than good. Instead, these institutions should implement policies that encourage individuals to log their sleep hours to ensure they sleep for at least 7-9 hours each night. In countries with low average sleep time, governments should educate people on the consequences of sleep deprivation through advertisements and media, such as a national campaign similar to those for heart disease or vaping.

When individuals consistently prioritize and receive enough sleep, dreaming can fulfill its maximum potential to improve various aspects of human lives. Ultimately, not only do dreams contribute to better physiological health, but also plays a crucial role in inspiring personal growth, promoting socioeconomic mobility, and even driving significant historical change. To tap into the transformative power of dreams, individuals should consider keeping a personal dream diary, recording their most memorable dreams regardless of how strange they may seem. By documenting even the most bizarre or ridiculous fantasies, we open ourselves to the possibility of generating innovative ideas that have the potential to shape the course of history forever. It is through embracing and exploring the workings of our “idle brains” that we can uncover the hidden treasures within these seemingly vain – yet undeniably powerful – realms of imagination, which we too often take for granted.

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