

Oneirology: The scientific study of dreams

My whole life I've been extremely interested in psychology and how the mind works, specifically the subject of sleep and dreams. I've always had trouble remembering my dreams but I usually remember them when they're nightmares. I thought this was interesting so I began doing some background research on sleep, dreams and nightmares. I wanted to find out for myself which myths about dreams are true and which aren't, and I hoped to find out facts about dreams that most people don't know. I also was interested in learning about the stages of sleep, so this is where my research began. Through the course of my research, I learned about the five stages of sleep, the different kinds of dreams that we have, Sigmund Freud and Carl Jung and their interpretations of dreams, as well as surrealism. I started with three essential questions: What does our brain do when we sleep? What do our dreams mean? How can certain things affect our dreams? We all dream, but we can't control what happens in our dreams--our subconscious mind makes it up for us.

Let's start with the basics: the five stages of sleep. Stage one comes first in the cycle of sleep; it's known as the stage between being asleep and being awake. During stage one of sleep, the brain waves have a very high frequency and very low amplitude. This is when our brain is still active and thinking about many different things. It's starting to calm down but isn't quite there yet. These brain waves are called theta waves.^{2 8 9}

Stage two of the sleep cycle is classified as the stage when the sleeper falls deeper into sleep and it becomes more difficult to wake them up. The brain waves during stage two are called sleep spindles, which have a high frequency and low amplitude. Stages three and four are usually considered one stage during the sleep cycle. In these stages, the sleeper enters slow-wave sleep (SWS) and they're less responsive and show no reactions. The brain waves during stages three and four are called delta waves, and they have a lower frequency and higher amplitude.^{2 8 9}

REM, or Rapid Eye Movement, is the final stage of the sleep cycle. This is the stage where most dreams occur. During REM, our muscles are paralyzed. If our muscles weren't paralyzed, we would physically act out our dreams as they happen. In studies where sleepers are watched and their sleep cycles are tracked, you can see the sleeper's eyes moving during REM. This is usually an indicator that the sleeper is dreaming. If we're woken up during the REM stage, we're more likely to remember our dreams because this is the stage in which dreams occur. During REM, the brain waves have an extremely high frequency and low amplitude.^{2 8 9} In a normal eight hours of sleep, humans usually go through the sleep cycle five to six times a night. The cycle goes from stage one, two, three/four, two, REM.

So, what are dreams? Dreams are a succession of images, emotions, ideas and sensations that occur in the mind during REM. Additionally, dreams are a form of thinking that occurs when there is a very small amount of brain activity. External stimuli are blocked from our mind and our self-system shuts down. Our self-system is our collection of self-perceptions. It protects us from taking in information that would make us reevaluate all of our preexisting self-perceptions. Scientists are still unsure if dreams are essential to making sense of the world and to understanding the mind. Maybe if we didn't dream we wouldn't be able to understand the way certain things work. Or perhaps our dreams are indications of decisions we should make in our lives. Or maybe they

predict something that may occur sometime in the future. Oneirologists still aren't sure of any of this. Some people argue that our mind is dreams are part of our mind's behavior and are most definitely essential to understanding the mind.^{2 8 9}

Our muscles are paralyzed while we dream, however, there is a disorder where the muscles are not paralyzed during REM and the sleeper acts out their dreams. This is called REM Sleep Disorder. It prevents the paralysis of REM sleep, and allows the sleeper to act out their dreams. This disorder can be extremely dangerous and most people with this condition usually take everything out of their bedroom to prevent injury. Usually the sleeper has a neurodegenerative disorder such as Parkinson disease in addition to REM sleep disorder.¹⁴

Dreams can last anywhere from 20 seconds to 20 minutes, and this brevity is why we tend to forget 95-99% of our dreams.⁶ We usually dream four to six times a night, but, Oneirologists aren't sure if dreams have a hidden meaning or not. Some may think so, but others just believe they are successions of images in our mind that occur during REM.⁶ Stress and fear can influence our dreams and turn those dreams into nightmares. Additionally, drugs can make dreams extremely vivid and scary. The myth that blind people don't dream is extremely false, as is the myth that when you die in your dreams, you die in real life. Oneirologists believe that people who remember less of their dreams tend to be less skilled at tasks that involve visual imagination.⁶

What are nightmares? Nightmares are unpleasant dreams that cause a negative emotional response in the mind. These emotions usually include terror, fear, anxiety, despair or sadness. We tend to remember more nightmares than dreams because of their unpleasantness. For some, they're more frequent than other kinds of dreams.⁴

Sigmund Freud believed that everything in dreams have some hidden meaning. Most of those hidden meanings are sexual. He believed that the number three represented a man's sexual organ and that things that jut out such as mountains, rocks, sticks, umbrellas, poles, trees, etc. represent phallus. He also believed that penetrating and harming objects such as knives, daggers, sabers, lances, swords, guns, rifles, revolvers, cannons, as well as pipes, watering pots, fountains, hanging lights, pens and aerials are also symbolic substitutes for phallus. Freud believed that balloons, airplanes, helicopters, rockets, etc. symbolize erections. Hollow objects that can contain things like shafts, pits, caves, boxes, bottles, suitcases, pockets, closets, ships as well as entrances to houses and buildings represent female genitalia. Finally, Freud believed that sliding; playing (instruments included), slipping and breaking branches represent masturbation. Freud also believed that teeth falling out were symbols of punishment for masturbating.⁷

I do believe that certain things, (people more specifically) in our dreams may have meaning but I most definitely do not agree with Freud's interpretation of dreams. As stated before, I believe that our subconscious mind makes up our dreams for us, but I don't think objects in dreams versus reality are any different. I believe that the meaning in our dreams is more important than the objects.

Carl Jung has his own interpretations of dreams that are completely different from Freud. Jung believes that in dreams, there are seven different major archetypal characters. "The Persona" is the image that we present to the world while we're awake. It may or may not resemble you completely physically or emotionally. "The Shadow" is the rejected or oppressed feature of oneself. Jung says that it's the part of ourselves that we do not want to see because of its unappealing aspect. It symbolizes fear, anger or

weakness. It may be presented as a stalker, murderer, pursuer or bully. “The Shadow” can be represented as a close friend or relative which may seem frightening. This figure may force us to confront things that we don’t want to see or hear. “The Anima/Animus” is the female and male features of us. In our dreams, the anima is represented as a highly feminized person. Contrary, the animus appears as a highly masculine figure. Jung believed that these images appear as a reminder that you must learn to appreciate your masculine (more assertive) or feminine side (more emotional).³

“The Divine Child” is known as our true self in its purest form. It symbolizes our innocence, helplessness and sense of vulnerability as well as our aspirations and full potential. In our dreams, a baby or young child usually represents this. “The Wise Old Man/Woman” is the figure that serves guidance and words of wisdom. A father, teacher, doctor, priest or some unknown authority figure, usually represents them. “The Great Mother” is known as the nurturer in our dreams. She appears as our own mother, or grandmother, sometimes-another nurturing figure. She provides positive reassurance. She also may be depicted as a witch or old bag lady, when she’s associated with seduction, dominance or death. This may mean that our mother who is the giver of life is also jealous of our growth away from her. “The Trickster” plays jokes to keep us from taking ourselves too seriously. They tend to make us feel uncomfortable or embarrassed and tend to make fun of us or expose us to our vulnerabilities. These main characters in our dreams all have a meaning behind them.³ I find myself being able to believe Jung’s interpretations more. I believe that there are certain meanings in our dreams, which may be why I can relate to Jung’s beliefs more.

What are Lucid Dreams? Frederik (Willem) van Eeden came up with the term lucid dreams, after studying his own dreams. Lucid dreams are dreams when you’re aware that you’re dreaming. Lucid dreams usually only occur a few times in one’s life. The sleeper can control their participation or manipulate their experiences in their dream to some degree. Lucid dreams are very vivid and realistic.¹⁰

Contrary to lucid dreaming, recurring dreams are dreams that occur repeatedly over a long period of time. I think we all know the dream where it feels like we’re falling and wake up just as we’re about to hit the ground. That dream is one of the most common recurring dreams. Other common recurring dreams include: the feeling of flying, being held down or feeling like you’re unable to move, being naked in a public place, failing a test or not being prepared for a test, not having the ability to speak, losing teeth, escaping, feeling like you’re unable to breathe, feeling as though you’re drowning, finding new rooms in a house, unable to turn on lights and finally, feeling like you’re falling. Most of these dreams occur during stage one of sleep where you’re about to fall asleep but are still awake.

When I asked myself the question “How do dreams reflect the self?” I began to think. I don’t really have a solid answer to this question because I don’t know if my dreams reflect me as a person. I usually have dark, scary dreams but that doesn’t necessarily mean that I’m a dark and scary person. Contrary to that, maybe the meaning of those dreams relate to me. For example, if I have a dream where someone’s chasing me and I’m crying for help, that may mean that in reality I just want someone to help me when I’m sad. Jung and Freud’s believed that everything in every dream completely resonated with you. I don’t think I completely believe either of their opinions but I do agree with Jung more.

How do dreams impact our perception of waking reality? I personally believe that certain dreams can make us be thankful for what we have in our lives. Nightmares where a loved one dies, makes us appreciate their life even more. Additionally, certain dreams may give me ideas or inspiration and may make me push myself to do certain things. Dreams where I get what I want make me take risks. I also believe that when certain people show up in dreams, it represents a longing for that person.

How do dreams fuel one's artistic process? Personally, I don't think that my nightmares affect my art because I usually have nightmares and I usually make colorful, upbeat art. Contrary to that, I may purposefully make colorful art so that my nightmares don't affect my reality. Surrealists, however use dream analysis to inspire their artwork, which I admire. Surrealism is a cultural movement that began in the 1920's. It is best known for its writing and visual works. The main goal of surrealism was to, as André Breton said, "to resolve the previously contradictory conditions of dream and reality into an absolute reality, a super-reality." This movement was committed to communicating imagination that is found in our dreams, free of the conscious mind. Some of the major artists of the movement included Salvador Dali, Max Ernst, René Magritte and Joan Miró. While looking at these artists' artwork, I notice that they use a lot of fluid strokes and vibrant colors. I think this may be because in order to represent our dreams, we need to use our imagination to fill in the missing pieces of what we forgot about them.

Unlike in our wakeful mindset, we can't consciously control what happens in our dreams. Some might find this concept frustrating, but we can learn a lot about ourselves through our dreams. Understanding how we sleep and dream can be helpful in understanding a phenomenon that happens in all of our daily lives. Everyone dreams but whether or not we remember those dreams are a different story.

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