Dreams: those mysterious movies that our brain plays for us when we're asleep. We're still very much in the dark about how it all works though, so let's unpack what we know so far

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DREAMING IS A MAJOR part of being human. Everybody does it. In fact, people usually dream about four to six times a night, with these dreams generally lasting anywhere between five and 20 minutes. According to psychologist Robert Feldman, the average person will have around 150 000 dreams by the time they're 70, although most of these (about 95%) are forgotten shortly after a person wakes up. This is why many people claim that they don't dream at all.

The Dawn Of Dreaming

The earliest evidence of people's dreams have been found on Mesopotamian clay pots that date back 5 000 years. Many ancient civilisations such as the Greeks and Romans believed that dreams were messages from the gods – the Egyptians even reportedly had 'dream incubation beds' for people who were thought to have the gift of receiving divine revelations through their dreams.

It wasn't until the late 19th century that the first theoretical studies of dreams and their meaning came about as a result of the work of famous psychoanalysts Sigmund Freud and Carl Jung. The first piece of literature published was in 1899, with Freud's *The Interpretation of Dreams*. Since then, and with the development of electroencephalography (EEG) and neuroimaging, the topic of dreaming has become more widely researched. Today, there's even a scientific field for the study of dreams called oneirology.

Stages Of Slumber

In Freud and Jung's time, it was assumed that people dream at random times during the night and that the brain is inactive when we're asleep, but this was before technological advancements allowed scientists to get an in-depth picture of what actually happens inside our head while we're catching some Zs. Thanks to EEG, researchers discovered that our brain is really quite active during sleep. They were able to distinguish different stages of sleep in relation to the neural activity: Stage one ('light sleep') is where a person exhibits slow eye movement and brain waves are still quite active. In stage two, eye movement stops and brain waves start to slow down; breathing becomes deep and steady. Stage three and four are called 'deep sleep' and this is when extremely slow brain waves, called 'delta waves', begin to appear and increase as sleep progresses from stage three to four. There is no eye movement or muscle activity in this time. It's difficult to wake someone up from these stages, and people who are woken up are often disoriented.

Finally, stage five was identified as the rapid-eye-movement (REM) stage of sleep by Nathaniel Kleitman in 1953. Here, breathing becomes more shallow and irregular, a person's muscles are essentially paralysed, and the eyes begin to jerk rapidly in different directions. The discovery of REM sleep proved to be a major breakthrough for the study of dreams, as it was found that dreaming occurs mainly, and most vividly, during this stage.

Scientists came to this conclusion since it was most often after being woken from this stage that people reported having a dream and were able to describe it in detail. Studies also showed a strong correlation between REM sleep and emotional well-being, memory and mental performance. In a study called *A Behavioral Analysis of Dreaming*, people who were woken up before they could reach the REM stage struggled to perform tasks that day more than those who were allowed to finish their sleep cycle. And according to the magazine *Scientific American*, 'Severe REM-sleep deprivation is increasingly correlated to the development of mental disorders.' So it's clear that REM sleep (and by extension, dreaming) is essential for human functioning.

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THE AVERAGE PERSON WILL HAVE AROUND 150 000 DREAMS BY THE TIME THEY'RE 70

DREAM THEORIES

Still not exactly sure why we dream? We've rounded up a few theories that offer some possible explanations...

1: MEMORY CONSOLIDATION

Many studies in recent years have focused on the effects of dreaming on memory and emotions. The findings suggest that it plays an important role in helping us consolidate and process our experiences. According to *Scientific American*, 'Our dream stories essentially try to strip the emotion out of a certain experience by creating a memory of it. This way, the emotion itself is no longer active. This mechanism fulfils an important role because when we don't process our emotions, especially negative ones, this increases personal worry and anxiety.' Have you ever found that if you do something often in a day or have a specifically strong emotional experience, you dream about it that night? This is our brain's way of sorting through and storing our emotions and experiences as memories, so that we have fresh mental processing power to deal with new experiences and emotions the following day.

2: THE SUBCONSCIOUS REVEALING ITSELF

The psychoanalytical theories of Freud and Jung claimed that dreams are a manifestation of the hidden aspects of our subconscious. However, both men's theories differed vastly. Freud believed that dreams allow us to express and act out our deepest desires and wishes, which we usually suppress for fear of their unacceptability or inappropriateness in real life. Therefore, from Freud's perspective, dreams help us to conceal our unconscious. Jung, on the other hand, believed that there's nothing secretive about our dreams and that they're just telling us what is going on inside our mind through symbolic messages. And so from Jung's perspective, dreams reveal our unconscious to us. Jung rejected Freud's conclusion that dreams should be interpreted in order for us to get to the core of these impulsive desires and 'fix' them. Instead he argued that dreams are just showing us who we really are, and that to understand the meaning of our dreams is to understand ourselves better. As our conscious and unconscious worlds become integrated, we can become more 'whole'. 'Dreams are impartial, spontaneous products of the unconscious psyche, outside the control of the will. They are pure nature; they show us the unvarnished, natural truth,' Jung once said.

3: ACTIVATION-SYNTHESIS HYPOTHESIS

The activation-synthesis hypothesis, proposed by many scientists, argues that dreams don't actually mean anything – they are just random by-products of our neural impulses/natural brain activity, which then trigger thoughts and images from our memories. Dreams are simply a natural attempt by our brain to make sense of it all. We don't know about you, but we prefer the idea of dreams being mystical messages from our inner realms. **FL**