

Translated excerpt

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Träume. Eine Reise in unsere innere Wirklichkeit

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Dreams:

The Science of Unlocking Our Inner Reality

Translated by Jefferson Chase



Introduction

A New Understanding of Dreams

Do you remember? Maybe you were floating through the street where you always played as a child. Or you were desperately trying to catch a train, but things kept getting in your way. Possibly you even encountered a polar bear in a swimming pool.

You say you don't remember anything of the sort? Without doubt you experienced things just like these last night. You dreamt, and such scenes were more than just brief interruption in an otherwise calm sleep. For a number of hours you were the hero in a world that you yourself created. As we now know, dreaming is almost always an integral part of sleeping. And since sleep makes up roughly one-third of our lives, that means that you spend more of your life dreaming than doing anything else.

You've likely forgotten many of your nocturnal joys, fears and battles. Most people only remember occasional dreams. But if you often wake up with the feeling that you've experienced something strange, you know how incomplete your memory is. We can only reconstruct bits and pieces of our dreams. Still, we sense that there must have been a lot more, as though at night we penetrated deep into a foreign continent, the coastline of which is all we can see during the day. This continent is our psyche.

So what *are* dreams? Sigmund Freud called them the "royal road" to the unconscious, interpreting them as an expression of secret wishes and experiences in childhood. More than a century has passed since Freud published his groundbreaking work *The Interpretation of Dreams*. Today we know things about nocturnal experiences Freud had no idea about. So it's high time to approach the phenomenon of dreams from a new angle. This book is intended to show that dreams are much more than the expression of unconscious desires. They are the key to solving the mystery of our consciousness. They allow us to recognize how our brains produce what we experience as reality.

On the one hand, we owe our understanding of dreams, which has increased enormously in the past few years, to new methods in brain research. For example, we can now measure the activity of the brain's neurons during sleep with

unprecedented precision. You would no doubt reject the idea that someone could read your dreams while you were asleep, perhaps dismissing it as a piece of science fiction. But it's already a reality. The signals a scanner records from the brain of someone sleeping tell us what that person is experiencing. With a few limitations, they can even show us what images that person is seeing.

Scientists have been collecting protocols of dreams for decades. Dreams used to only be recorded in exceptional cases and took the form of anecdotes. Today, we have gigantic dream data bases at our disposal. Tens of thousands of protocols can be compared and analyzed. They give us information, for instance, about how dreams reflect our daily experiences, lifestyle and personalities.

But dreams don't just direct our attention to the past. One of the surprising new insights is that dreams help us to deal with the future. While we're dreaming, our capabilities increase, and our brains change. We literally learn in our sleep, and our personalities continue to develop overnight. For that reason, dreams not only show us who we are but who we might become.

There is a long tradition of people observing and researching dreams. From the Antique oracles to Freud, people have tried to answer three main questions:

- Why do I dream?
- What do my dreams say about me?
- How can dreams help me in life?

In the pages to come, I will try to answer these questions in light of what we know today. In the process, I will present a new understanding of dreams that has arisen from what I've learned in most recent years.

While writing this book I myself experienced how thinking about dreams made me far more conscious of my own dreams. People with whom I regularly discussed my project also reported that they could suddenly remember much more frequently and in much greater detail what they had experienced while asleep.

Examining our dreams thus not only helps us to better understand our perception and consciousness. It also allows us to discover a largely unknown side of our existence. To put it another way: wouldn't you think it a shame if you missed out on one-third of your life?

Chapter 10 The Undercurrents of the Soul

How feelings reveal the meaning of our dreams

If there were a Top Forty of the dreams people most often report, four subjects would be well out in front: being pursued, sex, falling and always being frustrated in something you absolutely need to do. What's conspicuous is that strong feelings are behind all of these subject matters: fear, desire, shame and irritation. Whether in Germany, America or Japan, eighty percent of adults recall dreaming about these topics, even though very few of them have ever had to flee for their lives or have fallen from a great height. By contrast we almost never dream of sitting in front of a computer or reading a book or newspaper. For years I as an author have spent a large portion of my days writing, yet I can't remember a single dream where writing played any role whatsoever.

On the contrary, like seventy percent of all Germans, I'm well acquainted with the discomfort of dreaming that you are about to miss a meeting or a bus or plane. Moreover, I'm among millions of people who have taken their university qualification exams dozens of times. Even today I repeatedly dream about going into a test without the slightest inkling what might be asked because I skipped class so often. Being sorry is of no use. The only way out is to wake up.

How to explain this dream? In one of its details it does indeed reflect reality. In the latter years of my secondary education, I wanted to spend as little time as possible in school. But almost as often I dream about have to take a test to get my undergraduate and doctoral degrees, and I enjoyed going to university. And in any case, I can't remember ever being seriously afraid of tests. Whether written or orally, I generally went into exams full of confidence, and my teachers and professors were almost always mainly concerned with getting through such exercises with everyone's dignity intact. I failed one test in my entire life, when a visibly bored driving instructor demanded to see my skills in parking a car.

Thus my biography hardly explains why fear of exams should haunt me at night or why I still dream today of tests that I passed decades ago. Seen from this angle, the dream makes no sense. We might suppose that the test is only a symbol, which actually represents something else entirely. This is how most analyses of dreams proceed.

Freud's *Interpretation of Dreams* is also based on the assumption that behind every dream is a repressed desire, which can only reveal itself in encoded form because the excessive agitation it entails would otherwise disrupt sleep. Freud took a personal interest in the mystery of the exam dream since, although he was an excellent student at all levels, he too repeatedly dreamt of having to take tests. Such dreams, he concluded, expressed the desire to master a difficult situation. But they also had a deeper meaning. The situation of the exam represented something embarrassing that we don't want to admit. For Freud, this something was the "indelible memories of the punishments we received in childhood for...illicit sexual acts." One of the most common objections to Freud is his supposition of sexual content in even the most harmless seeming cases, but that's unfair. The epoch in which he lived the late nineteenth century was unbelievably prudish. Another objection is far graver. Like as the interpreters of dreams who preceded him, Freud never offers proof that these nocturnal scenes do in fact mean something other than what they depict. It's pure speculation that dreams are full of symbolism. That's an assumption I'd like to examine in greater detail.

Is it not possible that the images don't contribute all that much to the significance of the dream? Freud himself acknowledged the extent to which emotions influenced human perception and behavior. Modern neuroscience ascribes an even more significant role to feelings, treating them as the basis for all conscious perception. You don't know who you are because you've thought about it. You sense who you are because you've felt joy and pain, fear and sadness, as we say in chapter seven. Emotions are among the most elementary stimuli in our brains. We owe it to them that something like self-consciousness could even evolve.

Nonetheless we are rarely conscious of the meaning of our own emotions. Usually we only credit them with a secondary role in perception. We are constantly trying to explain feelings via events, conceiving of the former as reactions to what happens to us. Someone in a good mood thinks that the reason is a triumph, a pleasant encounter or merely the sun breaking through an overcast November sky.

This is precisely the way we treat our dreams. We think that the menacing professor or the phantoms chasing us are the causes of our fears. If we awake in a mood of euphoria, we ascribe our good mood to the excitement of being able to fly or an erotic adventure we experienced in our dreams.

In reality, during our waking hours, the true origins of our feelings often remain a mystery. Everyone has experience fighting in a relationship because one partner comes home from work in a bad mood and tries to hold the other responsible. And the fact we find sunlight in autumn so pleasant probably has to do with the fact that we were in a cheerful mood anyway and thus were receptive to the beauty of nature. As we have seen, our perception of the external world largely arises in our own heads. We construct an emotional reality – and then hold our environment responsible for what we feel.

There is a classic experiment showing how easily we're satisfied with the next-best, false explanation for emotions. Researchers injected unwitting test subjects with a solution containing adrenaline, which caused their blood pressure to rise and their pulse to increase. The test subjects immediately related the resulting sense of physical excitement back to their irritation with the director of the experiment.

In our sleeping hours, the situation is far less transparent. When we're awake, external events can indeed give rise to feelings. The question is whether we can correctly distinguish between cause and effect. But in dreams, everything – action as well as feelings – arises in our heads. So why should our emotions be a response to what we experience? The opposite could equally well be true. Perhaps we first enter into a state of happiness or fear, and our brains generate suitable images as a reaction. In that case, dreams would be ruled not by the logic of events, but by the logic of emotions. What we experience would only be an expression of our emotional disposition. We float through a magical landscape *because* we're feeling happy. Vice versa, if we're depressed, the world of our dreams will appear dark.

Perhaps the key to the mystery of my exam dreams my fear and not the exam. But where does such fear come from?

Feelings can come over us out of nowhere. No one has ever described more exactly and perceptively how a strong emotion can break out at any moment in an ordinary day than Marcel Proust in his novel *Remembrance of Things Past*. Countless essays have summarized in two or three sentences how the enjoyment of a madeleine prompts the hero's memory, but it's worth examining the individual details. The narrator has returned home on a cold day with a chill in his bones. To warm him up, his mother makes him a cup of tea, which she serves with a

madeleine, a small sponge cake. When he puts a spoonful of tea, in which he has dissolved a morsel of cake, to his lips, his internal state suddenly changes:

No sooner had the warm liquid, and the crumbs with it, touched my palate, a shudder ran through my whole body, and I stopped, intent upon the extraordinary changes that were taking place. An exquisite pleasure had invaded my senses, but individual, detached, with no suggestion of its origin. And at once the vicissitudes of life had become indifferent to me, its disasters innocuous...this new sensation having had on me the effect which love has of filling me with a precious essence...Whence could it have come to me, this all-powerful joy?

To answer this question, the narrator takes another spoonful of tea and then a third, but his emotions don't become stronger. Apparently, the tea is not the cause of his "exquisite pleasure." It has to come from somewhere within. But Proust's alter ego resists the temptation to decide upon an explanation for his sensation too quickly. As if he knew how easy it is for us to deceive ourselves about the origins of our feelings, he tries to sense the source of his happiness rather than explain it.

He makes a final attempt to solve the riddle by concentrating completely on the moment when he first smelled the tea and tasted the cake. He even plugs his ears so that he's not distracted by any sounds from the adjoining room:

And suddenly the memory returns. The taste was that of the little crumb of madeleine which on Sunday mornings at Combray...when I went to say good day to her in her bedroom, my aunt Léonie used to give me, dipping it first in her own cup of real or of lime-flower tea. The sight of the little madeleine had recalled nothing to my mind before I tasted it; perhaps because I had so often seen such things in the interval, without tasting them, on the trays in pastry-cooks' windows, that their image had dissociated itself from those Combray days to take its place among others more recent.

Proust – an excellent observer of human psychology – recognized that memories of emotions can be almost completely disengaged not only from memories of events, but from linguistic and visual thinking in general. Strong emotions seem to

lead a life of their own. That's why that can come over us so suddenly, as Proust described in the madeleine episode. In our waking hours, we rarely register such sensations – even over the course of more than 4000 pages of *Remembrance of Things Past* the narrator only has one such experience. We're too preoccupied with thoughts and external impressions. It's no accident that Proust's narrator plugs his ears. But since in our sleeping hours the brain systems that seek to establish logical connections and our sensory organs largely shut down, emotions in dreams are able to suddenly overwhelm us, as if out from nowhere.

In chapter six, when we discussed memories of dreams, we became acquainted with the neuro-biological basis of this phenomenon. The brain doesn't put all the information relevant to an event in one location. On the contrary, it stores feelings, images and facts in various sectors. Unlike a computer, which keeps all data on a single chip or hard drive, the brain operates strictly according to division of labor. Every sensual impression, every emotion and every thought leaves its mark where it arose. The visual cortex preserves individual visual details, the audio cortex saves information about sounds, and the brain centers involved with emotions store memories of feelings.

But feelings are distinguished from the other elements of memory. Whereas sensual impressions and thoughts are mainly processed in the large cerebral cortex, emotions arise in other areas of the brain, in structures that date back to the early period of human evolution. They run like a hem along the lower edge of the cerebrum connecting it with the deeper centers of the diencephalon. The Latin word for hem is "limbus" – hence the term limbic system.

In the REM phase of sleep with its particularly intense dreams, the limbic system is more active than at practically any other time. The Belgian neuro-scientist Pierre Maquet even thinks that in this phase of sleep the amygdala, a kind of switching point within the limbic system, "orchestrates all cerebral activity." If that is so, emotions would be the actual motors of dreams. They would determine what we dreamt and in which form. The English author Samuel Coleridge already surmised as much during the Romantic period: "The sphinx is not the cause of my fear, it is an explanation of my feeling of oppression."

If Coleridge and Maquet are correct, emotions are the true content of dreams. As original, compelling or mysterious as dream images may be, they don't have any intrinsic significance. On the contrary, they are mere illustrations. Perhaps it's a

waste of time to ponder too deeply who that shadowy figure was who chased us through the streets or, to use Coleridge's example, what threat the sphinx stands for. These uncanny figures are nothing but expressions of our fear.

Researchers found a bit of impressive evidence for this in a study around September 11, 2001. The televised images of the collapse of the Twin Towers no doubt created emotional turmoil in every American, and no one will ever forget the horror and sadness of that day. A large-scale study showed that these emotions left behind traces in people's dreams. In it, participants had been asked prior to 9/11 to regularly record their dreams – the result was 880 protocols of dreams before and after the event. The subjects of the study came from all parts of the United States, but none of them lived in Manhattan or had lost friends or family members in the attacks. Still, the act of terrorism changed their dreams. Reports of dreams after 9/11 contained significantly more frightening images. But, significantly, these dreams did not contain any of the images replayed endlessly on TV that we associate with 9/11. Airplanes, skyscrapers and scenes of downtown destruction played as little of a role in the dreams as before. People's inner turmoil expressed itself in other disturbing scenarios: predatory animals, carnage on a battlefield or strange objects like screwdrivers that were several feet long. These images weren't symbols of hijacked planes, fanatic Islamists or Osama bin Laden. They were a direct expression of anxiety and fear.

Feelings are what hold dreams together. People may appear and disappear, impossible things may happen, and backdrops might change like in a B-movie. The dreamer's mood, however, remains constant and openly emerges. As confused as the images might be, they always match a certain emotion, as extensive analyses of dream protocols have shown. The sleeping brain is like a skillful narrator who can come up with a fantastic story for every emotional disposition at the drop of a hat.

It's a myth that we are primarily haunted by negative feelings at night. The truth is that we tend to wake up more often from dreams that are full of fear and aggression so we remember them better. If test subjects are awakened at random points, they in fact report dreams of happiness, sexual desire and a generally positive mood a bit more often than dreams containing dark impulses. Positive feelings predominate in almost exactly one third of dreams, whereas negative ones

characterize slightly less than a third of dreams. People perceive slightly more than one-third of all their dreams as balanced or not all that emotional.

The mood of our dreams carries over into the following day. Several studies suggest that the saying “to get up on the wrong side of the bed” refers back to what we experienced the previous night. Pleasant dreams make us approach the next day positively, and bad dreams even more clearly make us get up in a bad mood. Just as some people get headaches before a change in the weather, dreams sometimes signal a few days in advance that a person’s mood is about to shift. In vivid fashion, they visually demonstrate how our emotional states are coalescing inside us.

Conversely we retain feelings from the preceding day in our dreams. Freud surmised this, hypothesizing that exam dreams occur especially when people “face responsibility for ensuring a given performance or the possibility of humiliation.” Freud’s hypothesis has been confirmed not only by Ernst Hartmann, who evaluated the dream protocols pre- and post-9/11, but also Joseph de Koninck, a psychologist at the University of Ottawa. He showed that nothing more than a good bedtime story was enough to prompt more positive emotions during sleep.

De Koninck’s study demonstrated how indirectly and subtly emotions affect our dreams. His subjects were women who had a mild phobia of snakes and were also somewhat skittish in other walks of life. Before they went to sleep, De Koninck played them audio tapes of walks through the woods in which a narrator would encounter either a squirrel or a snake. Independent of which animal appeared, some stories told of nice weather and a good mood, while others would describe storms coming up and the people out on the walk being frightened. The basic mood of these stories influenced the dreams of the test subjects – the details, however, did not. It made no difference whether the women heard a story about encountering a squirrel or a snake, whereas a washed-out walk noticeably darkened their dreams. Apparently, specific experiences before we fall asleep have less effect on our dreams as our general emotional disposition.

We can surmise that our mood, of which we’re often only half-aware, determines which memories we summon up in our sleep. The corollary phenomenon in a waking state is known as “mood congruent recall.” It’s what gives us the proverbial rose-tinted glasses through which we see the world when we’re happy. Even the first few beats of a cheerful song suffice in experiments to make people remember good things from the past. In phase of depression, by contrast, the entire

sadness of our existence swamps us – all the memories of failures, the deeds we're ashamed of and the people who have exploited us.

So is it a latent unease, of which we're perhaps unaware during the day, which makes up revisit the ordeals of school exams? I myself dream of tests particularly often when I'm about to publish a book or an important essay. My worry that I might negatively expose myself with my ideas has an effect on me similar to the tea-soaked madeleine on Proust: both sensations call up decades-old memories, For Proust, it was his childhood in Combray – with me it's exam situations at school and university. In both cases emotions serve as a bridge to the past.

Why do such journeys into the past so often take us back to our childhood or youth? In these periods, human beings constantly have new experiences and master unfamiliar challenges. The world seems alien, mysterious and exciting. That's why the majority of our memories come from growing up. Memory researchers talk of a "memory mountain" that ascends and descends between the ages of ten and thirty. During this phase, we first encounter love and friendship, success and failure, and they stick with us in all their detail because they're new. We constantly compare our current impressions with the experiences saved in our memories. Quite often this internal "research" takes us back to our late childhood and youth because those periods left behind the greatest number and most intense memories.

By building bridges to the past, dreams and their strong accompanying emotions open up spaces for memory to which we would otherwise have no access. Such voyages of discovery can enrich us like a trip to an exotic foreign country. But the past only delivers the material. The dream's significance relates to the present. So it's senseless to look for the symbolic significance of nocturnal images. There is no childhood trauma at the root of my exam dream. The professor has nothing to do with unresolved father-son conflicts. On the contrary, a present anxiety – for instance nervousness in the face of an imminent publication – seeks out suitable images from my memory.

Dreams reveal their import directly in emotions, without any symbolic disguise. The psyche has powerful undercurrents that escape our notice during the day because we're too busy processing external stimuli. In dreams, however, we experience what truly moves us.