

DREAMS

A BRIEF HISTORY OF DREAMING



- The ancient conceptions of dreaming were, like the first ideas of consciousness in general, thoroughly dualistic.
- Dreaming as a subjective experience feels like being in another reality.
- According to traditional beliefs, during sleep the body enters a death-like state, whereas the soul escapes from the body and enters a spirit world.
- There it meets the spirits of dead ancestors or perhaps the messengers of gods, and may get warnings or symbolically coded messages from them.

- The first scientific dream studies started in the later half of the 19th century, around the same time as introspectionism ruled in psychology.
- The study of dreams focused on the subjective appearance and experience of dreams, not on the meaning or the function of dreams.
- The introspective dream report was considered as a valid testimony of what had been experienced during dreaming.
- A student of William James, Mary Calkins conducted the first statistical studies on dreams in 1893. She calculated the frequency of occurrence of the various sensory modalities in dreams and came up with similar figures to those of modern dream researchers.

- The rise of Sigmund Freud's theories of psychoanalysis and John Watson's behaviorism seriously curtailed scientific dream research in the early 20th century.
- According to Freud, the experienced (or manifest) dream is not the *real* dream; it is merely a disguised and distorted *symbolic representation* of the real (or latent) dream.
- The manifest dream must be interpreted by a psychoanalyst, who alone has the abilities to decipher what the true dream was all about.
- Thus the science of dreaming was replaced by the art of dream interpretation.

Freud suggested that dreams have two functions:

- Dreams prevent the sleeper from being awakened by minor environmental disturbances.
 - Freud wrote: "The dream is the guardian of sleep."
- Wish fulfillment: the unconscious impulses are responsible for dreams and the goal of the dream was to gratify some drive.
 - According to Freud, dreaming is unconscious and reflects sexual and aggressive instincts that cannot be expressed during waking hours.
 - Freud placed great emphasis on the symbolism of dreams, especially those related to repressed sexual desires.

- Carl Jung: Suggested that dreams are *prospective*, that they help the dreamer prepare for events anticipated in the immediate future.
- In relation to Jung's personality theory, he felt if the development of any one subsystem is neglected, it will find expression in the form of dreams.

- With the rise of behaviorism, academic psychology as a science became hostile towards scientific dream research, because dreaming is a subjective phenomenon of consciousness.
 - Dream research has little to do with objective physical stimuli and measurable behavior.
- In the 1950s, with the development of sleep laboratories, empirical dream research made a sudden comeback on two different fronts:
 - the study of dream content
 - the study of the neurophysiological mechanisms of dreaming.

- In the 1980s, dream research was taken seriously as a form of consciousness.
- Dream experience was again studied systematically by looking at detailed introspective dream reports.
- Dreaming was to be explained by either the underlying cognitive or neural mechanisms, or both in combination.
- With the advent of cognitive neuroscience and consciousness studies in the 1990s, dreaming became a natural part of the mainstream psychological research.

DREAM STATES



HYPNAGOGIA and HYPNOPOMPIA

- "Hypnagogia" is the brief transitional state from wakefulness to sleep (literally, "leading to sleep"). The internally generated images in this state are called hypnagogic hallucinations.
- By contrast, hypnopompic hallucinations (literally, "leading out of sleep") occur in the transitional state from sleep back to wakefulness.

The content of the hallucinations is quite similar in both stages. Most typical are visual hallucinations of various kinds:

- simple geometric forms
- objects
- faces
- entire landscapes

Also auditory phenomena are common:

- noises
- sounds
- music or
- human voices

SLEEP PARALYSIS

- An ASC that often takes place in the hypnagogic or hypnopompic state is called sleep paralysis.
- It is a mixture of wakefulness and REM sleep-related muscular atonia: you feel awake, but cannot move any part of your body.

You may struggle to return to full wakefulness but you are often totally paralyzed.

This may be accompanied by the sense of an evil presence or the strong feeling that there is another person or being present somewhere close by, observing the sleeper and having some sort of evil intentions towards him or her.



It has been speculated that the true origin of many so-called “paranormal” experiences (ghosts, apparitions, UFO abductions) is to be found in the combination of sleep paralysis and hypnagogic hallucinations, especially among subjects who have never heard about sleep paralysis or hypnagogic hallucinations.

SLEEP MENTATION vs. DREAMING

- During sleep, subjective experiences of some kind occur most of the time. The subjective experiences during sleep can be roughly divided into two categories: *sleep mentation* and *dreaming*.
- All conscious mental events that occur during sleep are instances of *sleep mentation*.
- But not all instances of sleep mentation are *dreams*.

- **Dream:** a subjective experience, occurring during sleep, that involves complex, organized mental images that show temporal progression or change.
- **Mental Image:** a quasi-perceptual conscious experience of an object or event that exists in the absence of its genuine perceptual counterpart.
- **Temporal progression:** conveys the idea that dreams tell stories, or at least are like scenes from a story.

The difference between these two is in the complexity of experience.

- Typical sleep mentation consists of a single image that occurs in a single sensory modality and remains static or repeats itself in the same form.
- An image of a visual object, a word or sentence or sound heard repetitively or a thought that runs through the mind again and again are common types of sleep mentation.
- By contrast, dreaming involves complex, organized and animated imagery in multiple sensory modalities that shows progression and change through time.
- A dream is, in essence, a simulated world.

DREAM REMEMBERING



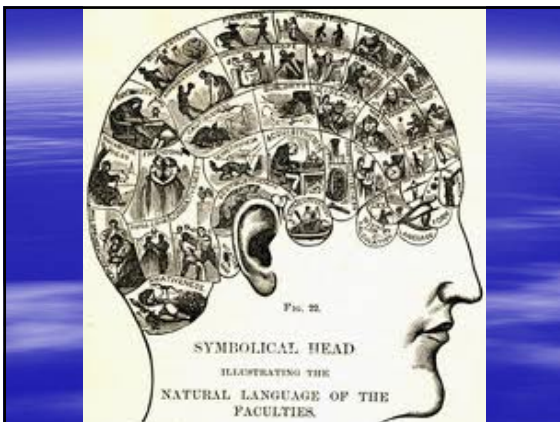
Most people report that they remember their dreams at least sometimes, but about 5% say they do not remember any dreams at all.

In one study, 1000 people in Switzerland were asked the question, "How often do you dream?" (Borbely, 1984)

- 37% reported dreaming every now and then.
- 24% answered that they dream only rarely.
- Only 6% of the study group responded "never."

- The results suggest that about 95% of people have personal experiences of dreaming.
- However, most of the remaining 5% will also start to remember their dreams if woken up directly from REM sleep, which shows that it is not a problem of not dreaming but a problem of not recalling dreams.

THE CONTENTS OF DREAMING



- Many studies and surveys have been done on dream content. In one of the largest, Calvin Hall collected over 10,000 dreams and concluded that most dreams reflect the events that occur in everyday life.
- Although most people dream in color, people who grew up in the era of black and white television have more dreams in black and white.
- Dream contents are remarkably consistent across times and cultures. There are gender differences and differences between adults and children.

- Men more often dream of other males whereas women tend to dream about males and females equally.
- Men across various cultures also tend to have more physical aggression in their dreams than do women, with women more often being the victims of such aggression in their dreams.
- Girls and women tend to dream about people they know, personal appearance concerns and an emphasis on family and home.

- Boys and men tend to have more male characters in their dreams, which are also typically in outdoor or unfamiliar setting and may involve weapons, tools, car, and roads.
- Men also report more sexual dreams, usually with unknown and attractive partners.
- In dreams people run, jump, talk and do all of the actions that they do in normal daily life. There are dreams of flying, falling, trying to do something and failing, all of which are very common dreams, even in other cultures. So is a dream of being naked in public.

- Almost half of reported dreams include an aggressive component, and the dreamer is personally involved in most of these, more often the victim than the aggressor. (Hall and Van de Castle, 1996).
- In general, negative emotions are more frequently experienced than positive emotions. In the same study 80% of reported dreams were negative and only 20% positive.
- The most commonly reported negative emotions were anger and fear.

Most dreams have a central character or a *dream-self*, who is a representation of the dreamer in the dream.

The dream-self usually feels and seems to be the same person we are in our waking lives.

- However, we often do not have at our disposal all the mental powers and cognitive skills that we have during wakefulness.
- Dream logic is unlike waking logic. We suffer memory lapses, objects and people can become composites and transform.
- People can do things for the strangest reasons. Normal laws of physics don't apply.

- We often lack insight into our own condition and we can have limited access to our autobiographical memory – we suffer from transient amnesia.
- All of this is usually accepted uncritically by the dreamer, who neither notices how peculiar it all is nor realizes that it is a dream.

- Most dreams are forgotten unless the sleeper is woken from the dream or wakes naturally from it.
- Even then most are soon forgotten if they are not mentally rehearsed or written down.

DREAM THEORIES



The most popular modern theories of dreaming can be classified into four categories:

- Problem-Solving Theories
- Mental Health Theories
- Threat Simulation Theories
- Random Activation Theories

Problem-Solving Theories

- French and Fromm (1964) suggested that dreams are simply the individual's attempts to solve problems of the day.

- Cartwright (1977) based on studies in sleep laboratories, suggested that the several dreams that occur during the night are related and may deal with the same theme or problem.
- The first dream of the night is the most realistic; the middle dreams are the most distorted and fantastic; and the last dream is often focused on the solution of the problem.

Cartwright proposed that dreams have two major functions:

- The dream gives the dreamer the opportunity to solve daily problems.
- Secondly, they provide the dreamer with an opportunity to attend to fantasy and to personal impulses.

Mental Health Theories

- Dreams, like psychotherapy, try to make us feel better about the negative things in our lives.

- Dreaming helps to get rid of unpleasant memories and experiences.
- Dreams could help us forget about our problems and difficulties; they could take us into pleasant, even ecstatic worlds of joy and happiness, when the real world has become too frightening or depressing.
- Unfortunately, dreams much more often repeat or exaggerate our traumatic experiences and fears.
- Research from sleep-related memory studies has shown that, during sleep, emotionally negative memories are selectively strengthened by the brain rather than forgotten.

Crick and Mitchison (1983) suggested that REM sleep and dreams are an active process of “unlearning” that the brain uses to “empty the trash” or “clean out the hard drive.”

Dreams are meant to be forgotten.

Threat Simulation Theories

- Dreaming is a simulation of the world to let us practice certain things in a safe place, especially dangerous and threatening situations that are too risky to practice in the real world.

Revonsuo, 2000, proposes that dreaming activates emotional memories and simulates threatening situations to give us training for future threats.

Threat simulation was supposed to be especially valuable for our ancestors, who, during human evolution, lived in an environment full of threats to survival.

Those ancestors with an efficient threat simulation system were more likely to survive the real threats, and thus dreaming got selected for its function as a threat simulator.

Random Activation Theories

- Dreaming has no function whatsoever. Dreaming is only a useless side-effect of neuronal activations that take place in the dreaming brain for purely biological reasons.

Hobson and McCarley (1977) proposed an activation-synthesis hypothesis.

Using brain-imaging techniques such as a PET scan, they found evidence that dreams are products of activity in the pons.

This lower area inhibits the neurotransmitters that would allow movement of the voluntary muscles while sending random signals to the areas of the cortex that interpret vision, hearing, and so on.

- When signals from the pons bombard the cortex during waking consciousness, the association areas of the cortex interpret these signals as seeing, hearing, and so on.
- Because those signals come from the real world, this process results in an experience of reality. But when people are asleep, the signals from the brain stem are random and not necessarily attached to actual external stimuli, yet the brain must somehow interpret these random signals. It *synthesizes* an explanation of the cortex's activation from memories and other stored information.

- In this theory, called the activation-synthesis hypothesis, a dream is merely another kind of thinking that occurs when people sleep.
- It is less realistic because it comes not from the outside world of reality, but from within people's memories and experiences of the past.
- The frontal lobes, which people normally use in daytime thinking, are more or less shut down during dreaming, which may also account for the unrealistic and often bizarre nature of dreams.

Some critics of this theory suggested that dreams may have more meaning than Hobson and McCarley originally theorized.

A survey that questioned subjects about their dream content, for example, concluded that much of the content of dreams is meaningful, consistent over time, and fits in with past or present emotional concerns rather than being bizarre, meaningless, and random.

- Hobson and colleagues (2000) have reworked the activation-synthesis hypothesis to reflect concerns about dream meaning, calling it the activation-information-mode model, or AIM.
- In this newer version, information that is accessed during waking hours can have an influence on the synthesis of dreams.
- In other words, when the brain is "making up" a dream to explain its own activation, it uses meaningful bits and pieces of the person's experiences from the previous day or the last few days rather than just random items from memory.

Lucid Dreaming



Lucid Dream: to dream while knowing that we are dreaming.

Characteristics of a Lucid Dream:

- The dreamer's consciousness seems remarkably awakeful

The lucid dreamer can:

- Reason clearly
- Remember freely
- Act volitionally
- Change the plot of the dream

What is the significance of Lucid Dreaming?

- Dreams could be the magic theater of all possibilities and a workshop of creativity and growth
- The illusory sense of certainty about the completeness and coherence of our lives leads us to what William James described as a "premature closing of our accounts with reality."
- Lucid dreams may guide us to higher levels of consciousness, for they suggest what it would be like to discover that we are not yet fully awake.
- As the state of ordinary dreaming is to lucid dreaming, so the ordinary waking state might be to the fully awakened state.

Mnemonic Induction of Lucid Dreams (MILD)

- During the early morning, awaken spontaneously from a dream.
- After memorizing the dream, engage in ten to fifteen minutes of any activity that demands full wakefulness.
- Then, while lying in bed, repeat to yourself, "Next time I'm dreaming, I want to remember I'm dreaming."
- Visualize your body lying asleep in bed, with rapid eye movements indicating that you are dreaming. At the same time, see yourself as being in the dream just rehearsed (or in any other dream) and realizing that you are in fact dreaming.
- Repeat steps 3 and 4 until you feel your intention is clearly fixed.

Finis