The Edge of Dreaming
A film by Amy Hardie

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I’m a mum with three kids, overstretched, loving it. The kids are integrated into this story — it’s wound through taking them to school, checking heads for lice, cuddles in bed and tantrums in the kitchen. The animals and the landscape also play a big part. I live up in the Scottish mountains, with huge views and no neighbors. We get lots of stars.

I was very shocked by my dreams. I make science films for a living and I don’t normally remember my dreams, unlike my psychoanalyst husband. He writes his dreams every morning, and says, comfortingly, that they are not to be taken literally. Except that my dream of my horse’s death was literally true. And this was followed by two more dreams, warning me that I would die this year, and then showing me how I would die.

I began filming my children after my lungs collapsed. I wanted to get the whole year on record. I didn’t tell my two girls, because I didn’t want them scared. Nevertheless, my youngest daughter came home and read my palm, announcing cheerily that my life line was short and that I would ‘have a happy life, but a short one.’

I met with neuroscientist Mark Solms, who has come to pre-eminence for his original scientific research into the sleeping brain states. He took me through what happens in the dreaming brain, and what he thought could be happening to me.

I realized, with only a month to go, I was really in danger — and that I had to get back inside my dream in order to change the dream.

Amy Hardie, 
Director/Cinematographer, The Edge of Dreaming

Filmmaker Amy Hardie. Photo courtesy of Cinemanet Europe
This is the autobiographical story of a rational, skeptical, mother, wife and science filmmaker who did not remember her dreams. Except once, when she dreamed her horse was dying. She woke so scared she went outside in the night. She found the horse dead. Her next dream told her she herself would die when she was 48.

Using a cinematic blend of art, science and documentary, The Edge of Dreaming (72:00) charts every step of the filmmaker’s 47th year. The film explores life and death in the context of a warm and loving family whose happiness is increasingly threatened as the filmmaker’s dream seems set to come true.

Amy Hardie confronts not only her own mortality, but the blurring of lines between things that she previously believed to be separate and even mutually exclusive: science and superstition, rational thought and dreaming. Her quest to make sense of her dreams takes her to extremes. She consults everyone from eminent neuroscientist Mark Solms to a shaman. This journey leads Hardie to a new appreciation for the permeability of boundaries and the complexity of the human brain.
Sleep and Dreaming

Although dreams have had weighty cultural significance for millennia, factoring heavily in everything from the Bible to the works of Shakespeare to Alice in Wonderland to the psychoanalytical theories of Sigmund Freud, only in the past 60 years or so have scientists begun to understand what really happens in the brain during sleep and dreaming.

Until the 1950s, when researchers discovered the REM (rapid eye movement) stage of sleep during which dreaming takes place, it was believed that the brain was more or less inactive during sleep.

Through countless experiments, psychologists, neuroscientists and other researchers have made great strides in understanding what goes on while people are out for the night. It’s clear now that much more happens than was previously thought — but having to rely on subjects’ own accounts of their dreams has imposed obvious limitations. There’s still much to learn.

Source:
http://www.ninds.nih.gov/disorders/brain_basics/understanding_sleep.htm
Dream Symbolism

Most currently accepted ideas about dream symbolism and interpretation descend from the theories of early 20th-century psychiatrists Sigmund Freud and Carl Gustav Jung. There is also evidence that the Iroquois had dream theories similar to Freud’s as early as the 17th century. For example, anthropologists have discovered that Iroquois dream theory reflected a belief that dreams were manifestations of the soul’s desires. The Iroquois also believed strongly in the conscious and the unconscious and often talked about or acted out dreams in order to relieve psychosomatic stress.

Freud, who was Austrian, also believed that dreams were a kind of subconscious safety valve, a way to act out unconscious desires, particularly suppressed sexual desires and other primal desires.

Jung, a Swiss native who studied under Freud, believed that Freud’s ideas were too simplistic. Jung posited that dreams represented not just unconscious desires, but an entire range of personal and collective unconscious experience.

Freud — though he is rumored to have said that “sometimes a cigar is just a cigar” — believed the majority of dream symbolism centered around sex: cylindrical objects from a carrot to a steam engine represented phallicues, while anything cavernous should be read as female genitalia.

Jung, though, believed a figure could have both objective meanings and subjective ones. A snake could represent a penis, as Freud would have claimed, but Jung also considered why the snake in particular appeared as a symbol for that dreamer. Another example: A thief could represent both a literal thief and the dreamer’s feelings about crime or dishonesty.
Jung is perhaps best known for his theory of archetypes, or universally understood models or prototypes found throughout folklore, myths and legends from around the world. These could be either figures — the child, hero, sage, trickster and devil are all examples — or events such as birth, death, marriage, floods, fires and the apocalypse. Dreams were considered a stage on which the various archetypes could interact.

So in Jung’s view, when a person dreamt of a flood or a devil, he was tapping into not only his own ideas of a flood or devil, but also age-old ideas common to the human unconscious.

Jung also proposed the existence of several aspects of the human psyche, building on Freud’s ideas concerning the ego, superego and id:

- The Self, or regulating center and facilitator of individuation;
- The Shadow, the opposite of the ego, possessed of qualities that the ego doesn’t recognize;
- The Anima, the feminine within a male;
- The Animus, the masculine within a female;
- The Persona, the image one presents to the world, which acts as a mask.

Recent research suggests that when interpreting dreams, what dreamers actually dream (much of which they don’t remember) is less important than what they want to believe.
Researchers Carey Morewedge of Carnegie Mellon University and Michael Norton of Harvard University surveyed students in India, South Korea and the United States and found that in all three locations the majority believed, as did Freud, that dreams have important emotional significance and can be valuable omens.

But the subjects were also found to regard the contents of their dreams with bias, assigning more significance to negative dreams if they were about people they disliked, and more weight to positive dreams if they featured people about whom they cared. Religious respondents found more meaning in dreams featuring religious figures than did their secular-minded counterparts.

The researchers coined the term “motivated approach to dream interpretation.” When asked if this approach might apply to Freud, Morewedge said, “Freud himself suggested that dreams of flying revealed thoughts of sexual desire. Interestingly, in the same text, Freud also suggested that dreams about the absence of the ability to fly — i.e., falling — also indicate succumbing to sexual desire. One might interpret this as evidence that scientists are just as self-serving as laypeople when interpreting their dreams.”

Sources:


Neuroscience and Dreaming

The development of brain-scanning techniques such as functional magnetic resonance imaging, which allows researchers to produce images that measure blood flow to different areas of the brain and thus activity in those areas, has been a boon to dream and sleep research in the past couple of decades. These tests allow scientists to see which parts of the brain are used during different stages of sleep and what effects injuries, mental illness and other impairments may have on normal function.

Some of today’s more biologically minded researchers would argue that both Freud and Jung are wrong about dreams’ real purpose.

According to J. Allan Hobson, a psychiatrist and sleep researcher at Harvard University, the main function of REM sleep is not psychological at all, but rather physiological. Hobson sees it as a time for the brain to warm up its circuits in preparation for the processing of sights, sounds and other stimuli during waking hours. In the 1970s, Hobson and
Robert McCarley found that REM sleep is regulated by a kind of switch in the brain stem called the pons that regulates wakefulness but has little to do with mental life. Based on that discovery, Hobson went on to posit that because dreams are caused by a part of the brain divorced from thought processes, dreams are nothing more than random activity in the forebrain and any narratives that a dreamer applies to them are simply efforts to make sense of these disconnected inputs. Hobson argues that the processes that take place during REM sleep are actually taking place all the time, but during waking hours more pressing concerns suppress them.

Other researchers have suggested similarly that dreaming is just what happens when the brain, whose job it is to make sense of the world, receives no external input.

Acceptance of Hobson’s theory resulted in a devaluing of Freud’s theories, at least in the scientific community, but then Hobson’s own ideas were dealt a blow when another researcher, Mark Solms, a professor of neuropsychology at the University of Cape Town, found that people who had suffered damage to the pons continued to dream nevertheless, meaning that the connection between dreaming and REM sleep is not so simple. Solms’ theory, in turn, bolstered support for Freud’s theory that dreams are the manifestation of unconscious desires.

A more recent theory about the function of dreams comes from Antti Revonsuo, a cognitive neuroscience researcher in Finland. On the basis of research that shows that negative emotions and aggressive interactions are more common in dreams than their positive counterparts, Revonsuo believes that dreams give people a chance to prepare mentally for dangerous situations that may occur in their waking lives.
Recent experiments involving lucid dreaming — a mixed state in which the subject experiences dreaming but retains some control over what he’s seeing — have been geared to gaining more insight into both the content and neurological processes of dreaming.

For now, most scientists would agree that the true function of dreams — psychological processing, physiological firings or something in between — remains elusive. What is clear is that whatever the larger purpose of dreams, they will continue to inspire, calm and bewilder the dreamer with their often highly illogical hodgepodge of memories and personal associations.

**Sources:**


Immediately after the film, you may want to give people a few quiet moments to reflect on what they have seen. If the mood seems tense, you can pose a general question and give people some time to themselves to jot down or think about their answers before opening the discussion.

Unless you think participants are so uncomfortable that they can’t engage until they have had a break, don’t encourage people to leave the room between the film and the discussion. If you save your break for an appropriate moment during the discussion, you won’t lose the feeling of the film as you begin your dialogue.

One way to get a discussion going is to pose a general question such as:

- If you could ask the filmmaker a question, what would you ask and why?
- What did you learn from this film? What insights did it provide?
- If a friend asked you what this film was about, what would you say?
- What is the significance of the film’s title?
- Describe a moment or scene in the film that you found particularly disturbing or moving. What was it about that scene that was especially compelling for you?
• The scientist in Hardie wants to believe that her dreams are coincidence. Solms, a neuroscientist, believes that she is processing subtle signals from her real-world experiences. The shaman sees dreams as a link between the spiritual and physical worlds. What is your approach to dreams and what they mean?
• The filmmaker acknowledges that human brains are hard-wired to make meaning of every experience. What meaning(s) do you make of Hardie’s dreams?
• What do you learn from this film about the effects of fear?
• Throughout the film, Hardie struggles to make rational sense of things she can’t explain. As she opens to possibilities that she previously dismissed as superstitious or spiritual, and therefore not scientific, she ultimately acknowledges that her experiences have led her to broaden her world view, saying, “I still love science. It’s just a bigger world, that’s all.” What messages have you received about the separations between body, mind and spirit or between superstition and science? In what ways does the film confirm or challenge your beliefs?
• What do you learn from this film about the relative value of scientific ways of knowing and other ways of perceiving the world?
• What is the relationship between Hardie’s vision of a scarred landscape at the end of the film and her attempts to reconcile dreams with real life?
FILM-RELATED WEB SITES

Original Online Content on POV Interactive (www.pbs.org/pov)

POV’s The Edge of Dreaming companion website www.pbs.org/pov/edgeofdreaming

To further enhance the broadcast, POV has produced an interactive website to enable viewers to explore the film in greater depth. The companion website to The Edge of Dreaming offers a streaming video trailer for the film; an interview with filmmaker Amy Hardie; a list of related websites, organizations and books; a downloadable discussion guide; and the following special features:

- Background information on dreaming;
- Dreaming quiz: What do your dreams say about you?
- Ask the filmmaker: Send your questions and Amy will answer them.

Official Film Site

THE EDGE OF DREAMING www.edgeofdreaming.co.uk/

The filmmaker’s website features upcoming screening dates, information on the film crew and more.

Science of Dreaming

NATIONAL INSTITUTE OF NEUROLOGICAL DISORDERS AND STROKE.
“BRAIN BASICS: UNDERSTANDING SLEEP.” www.ninds.nih.gov

The National Institute of Neurological Disorders and Stroke website provides visitors with a fact sheet that examines sleep and sleep disorders. (May 21, 2007)

THE MIND AT NIGHT: THE NEW SCIENCE OF HOW AND WHY WE DREAM (NEW YORK: BASIC BOOKS, 2004)

Andrea Rock, a renowned medical and science reporter, colorfully documents the history of dream research from the 1950s up to present day and considers the major questions that remain open, such as how people dream and why; theories of animal dreaming; the nature of memory; and the neurological relationships between dreaming, mental illness and consciousness itself.

DREAMING: AN INTRODUCTION TO THE SCIENCE OF SLEEP (NEW YORK: OXFORD UNIVERSITY PRESS, 2003)

Harvard psychiatry professor and sleep expert J. Allan Hobson explores the formal perceptual, cognitive and emotional qualities of dreams and enters into a chemical investigation of the facts of the psyche.

EXPLORING THE WORLD OF LUCID DREAMING (NEW YORK: BALLANTINE BOOKS, 1990)

This book relies on Stephen LaBerge’s laboratory work at Stanford University mapping mind/body relationships during the dream state and stands as a guide to gaining control over the subconscious.


Arnold Mindell explores principles found in psychology, math, physics and shamanism to link a cosmic perspective with ordinary life.


Mark Solms and Oliver Turnbull, two neuropsychologists, describe their book as a “beginner’s guide to the brain” and an exploration of “subjective mental life.” The Brain and the Inner World examines the relationship between the mind and the brain while also delving into the world of dreams, hallucinations and neuro-psychoanalysis.

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**THE GUARDIAN. “FIELD OF DREAMS.”**
www.guardian.co.uk
In this article, journalist Alok Jha uncovers research that offers some answers as to why humans spend years of their lives dreaming. (June 10, 2004)

**NEUROPSYCHIATRY REVIEWS. “EXPLORING THE RELATIONSHIP BETWEEN SLEEP, DREAMS AND MEMORY”**
www.neuropsychiatryreviews.com
Neuropsychiatry Reviews covers new research and emerging trends in neuropsychiatry and neuroscience. In this report, Debra Hughes discusses research examining the relationship between sleep and dreaming and the effect this relationship has on the quality of memories. (September 2007)

**WIRED. “FREAKY SLEEP PARALYSIS: BEING AWAKE IN YOUR NIGHTMARES.”**
www.wired.com
Sleep paralysis, an actual medical condition in which one wakes up in the dream world, afflicts half the population, haunting many with cryptic hallucinations. Alexis Madrigal reports that scientists are finally beginning to figure out the neurological basis of the condition. (August 7, 2009)

**Sleep Research**

**NATIONAL SLEEP FOUNDATION**
www.sleepfoundation.org
The National Sleep Foundation works to improve sleep health. This website provides articles on sleep disorders, links to sleep centers and labs, interactive features and more.

**Dream Interpretation**

**THE NEW YORK TIMES. “A DREAM INTERPRETATION: TUNEUPS FOR THE BRAIN”**
www.nytimes.com
This article delves into recent research surrounding the question of why people dream and whether dreams have any bearing on waking life. Journalist Benedict Carey discusses recent research on the weight of dreams. (November 9, 2009)

**THE INTERPRETATION OF DREAMS**
(NEW YORK: RANDOM HOUSE, 1978)
Sigmund Freud’s seminal work outlines his theory of unconscious forces within the framework of dream analysis. Relying on dispassionate analysis of his own dreams, Freud introduces his concept of the id, the ego and the superego.

**NIGHTMARES: THE SCIENCE AND SOLUTION OF THOSE FRIGHTENING VISIONS DURING SLEEP**
(WESTPORT, CONN.: PRAEGER, 2008)
Patrick McNamara explains what is known, what is suspected and what remains mysterious about nightmares.

**LUCID DREAMING: GATEWAY TO THE INNER SELF**
(NEEDHAM, MASS.: MOMENT POINT PRESS, 2009)
Expert Robert Waggoner recounts his own adventure with lucid dreaming and provides tested techniques and personal dream experiences. He encourages the use of lucidity to navigate a deeper reality and a connection to self.

**INTERNATIONAL INSTITUTE FOR DREAM RESEARCH**
www.dreamresearch.ca/
The International Institute for Dream Research provides interpretations and compares the dreams of individuals to collective dreams expressed in the daily news and popular culture. In addition, the organization offers educational workshops, seminars and private dream interpretation.
INTERNATIONAL ASSOCIATION FOR THE STUDY OF DREAMS
www.iasdreams.org
The International Association for the Study of Dreams (IASD) is a nonprofit, international, multidisciplinary organization dedicated to the pure and applied investigation of dreams and dreaming. The IASD promotes awareness and appreciation of dreams in both professional and public arenas; encourages research into the nature, function and significance of dreaming; advances the application of the study of dreams; and provides a forum for the eclectic and interdisciplinary exchange of ideas and information. The IASD also has a specific project dedicated to using dreams to help with illness and healing: www.healingpowerofdreams.com.

From PBS/NPR

NOVA. “DREAMS: EXPERT Q&A.”
www.pbs.org
Harvard neuroscientist Robert Stickgold answers emailed questions about sleep and dreaming. (November 30, 2009)

NOVA. “THE SLEEP-MEMORY CONNECTION.”
www.pbs.org
This website explores the stages of a good night’s sleep and the research linking sleep to memory.

TALK OF THE NATION. “THE SCIENCE BEHIND DREAMS AND NIGHTMARES.”
www.npr.org
Sleep researchers estimate that nearly three quarters of dream emotions are negative. But what do nightmares actually mean? Guests Natalie Angier, science writer for The New York Times, and Kelly Bulkeley, a dream researcher at John F. Kennedy University, discuss the science behind nightmares and shed light on the murky field of dream interpretation and analysis. (October 30, 2007)
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POV Interactive www.pbs.org/pov

POV’s award-winning Web department produces special features for every POV presentation, extending the life of our films through filmmaker interviews, story updates, podcasts, streaming video and community-based and educational content that involves viewers in activities and feedback. POV Interactive also produces our Web-only showcase for interactive storytelling, POV’s Borders. In addition, the POV Blog is a gathering place for documentary fans and filmmakers to discuss and debate their favorite films, get the latest news and link to further resources. The POV website, blog and film archives form a unique and extensive online resource for documentary storytelling.

POV Community Engagement and Education

POV works with local PBS stations, educators and community organizations to present free screenings and discussion events to inspire and engage communities in vital conversations about our world. As a leading provider of quality nonfiction programming for use in public life, POV offers an extensive menu of resources, including free discussion guides and curriculum-based lesson plans. In addition, POV’s Youth Views works with youth organizers and students to provide them with resources and training so they may use independent documentaries as a catalyst for social change.

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Front cover: Amy Hardie
Photo courtesy of Ian Dodds