IN SEARCH OF MEMORY
A FILM BY PETRA SEEGER

THE NEUROSCIENTIST ERIC KANDEL
WINNER OF THE NOBEL PRIZE

95 minutes / color / 1.85:1 / Stereo Digital / 2008
English and German w/English Subtitles

An Icarus Films Release
32 Court Street, 21st Floor, Brooklyn, NY 11201
T (718) 488 8900 / (800) 876 1710 / F (718) 488 8642
www.IcarusFilms.com / mail@IcarusFilms.com
Synopsis

“Memory is everything. Without it we are nothing,” says neuroscientist Eric Kandel, winner of the Nobel Prize for his groundbreaking research on the physiology of the brain’s storage of memories. As he explains, memory is the glue that binds our mental life together and provides a sense of continuity in our lives.

IN SEARCH OF MEMORY is a compelling blend of autobiography and history that recounts the life of one of the most important neuroscientists of the 20th century and illuminates scientific developments in our understanding of the brain’s role in recording and preserving memory. In addition to archival footage and dramatic re-creations of Kandel’s childhood experiences in Nazi-occupied Vienna and his formative years as an emigrant in New York, the film features discussions with Kandel, friends and family, as well as his public lectures in Vienna and New York, which explore both his professional and personal life, especially his emotional ties to Judaism.

Both through its personal journey into the memory of this amazingly spry and witty 79-year old, especially his traumatic experiences during the Holocaust, and a visit to his Columbia University laboratory, where Kandel and his colleagues demonstrate their experimental research, IN SEARCH OF MEMORY examines how the brain stores memories, the difference between short-term and long-term memory, Alzheimer’s and age-related memory loss, and structural modifications to the brain that enhance memory.

In revisiting the people, places and objects of Kandel’s lifetime experiences, IN SEARCH OF MEMORY reveals how everything we undergo changes the brain, even our genetic make-up, and can determine the focus of a life’s work.
Dr. Eric Kandel

Eric R. Kandel, M.D., is University Professor at Columbia, Fred Kavli Professor and Director, Kavli Institute for Brain Sciences and a Senior Investigator at the Howard Hughes Medical Institute.

A graduate of Harvard College and N.Y.U. School of Medicine, Kandel trained in Neurobiology at the NIH and in Psychiatry at Harvard Medical School. He joined the faculty of the College of Physicians and Surgeons at Columbia University in 1974 as the founding director of the Center for Neurobiology and Behavior.

Within the academic community, he is also admired as a teacher. He organized the neuroscience curriculum at Columbia and is an editor of Principles of Neural Science, the standard textbook in the field. He recently has written a book on the brain for the general public entitled In Search of Memory: The Emergence of a New Science of Mind.

Eric Kandel's research has been concerned with the molecular mechanisms of memory storage in Aplysia and mice. Kandel has received fifteen honorary degrees, is a member of the U.S. National Academy of Sciences as well as the National Science Academies of German and France. He has been recognized with the Albert Lasker Award, the Heineken Award of the Netherlands, the Gairdner Award of Canada, the Wolf Prize of Israel, the National Medal of Science USA and the Nobel Prize for Physiology or Medicine in 2000.

Undergraduate: Harvard College, 1952
Medical School: New York University, M.D., 1956
Internship: Montefiore Hospital, Rotating, 1956 - 1957
Residency: Massachusetts Mental Health Center, Psychiatry, 1960 - 1964
Board Certifications: Private Practice Assessment
Review Excerpts

“Mentally stimulating and emotionally affecting.”
—Michael Phillips, The Chicago Tribune

“This is not just a dry doc about brain functions. Seeger makes a convincing connection between Kandel’s work and his life as a Jew who escaped from Vienna during World War II. Kandel demurs early in the film that he isn’t easy to live with, but he’s certainly a pleasure to spend time with in a doc, and his story and his passion, which Seeger easily conveys, are, if you’ll pardon the inevitable pun, memorable.”
—Hank Sartin, Time Out Chicago

“Conveys the breadth of neuroscience and the scientific process.”
—Alison Abbott, Nature

“Because of Kandel’s powerful charm and energy, the science-less and more personal aspects of the documentary add an engaging and often comical texture to this very delicate quest for memory and remembrance.”
—Stephanie Lee, NYPress.com

“A passionate exploration of the life and work of Eric Kandel, the brilliant and irrepressible neurobiologist, whose pioneering work has illuminated the very workings of memory. But, like Eric, Petra Seeger’s film resonates in all directions, illuminating not only the trajectory of psychology and neuroscience in the last century, but the nature of art and science, history and remembrance, work and love, inspiration and achievement. It is an unforgettable journey.”
—Oliver Sacks

Festivals and Awards

Intermedia-globe Gold Award
World Media Festival
2009

DOK Festival Leipzig, 2008
Biografilm Festival, Bologna, 2009
Review Excerpts (2009 German Theatrical Release)

“The life of Nobel laureate Eric Kandel on the silver screen is an event. We experience how one of the greatest contemporary brain researchers confronts his Jewish "Vienna legacy" after seventy years, and we watch as he uncovers the neural foundation of memory performance. A documentary masterpiece in the history of science.

In making this film, director Seeger may well have made some contribution to her subject's personal healing. The documentary's sensitivity and moving emotion leave a lasting impression. Its other major strength is the ease with which Kandel's two or three great scientific ideas are communicated to the audience. A moving, fascinating documentary.

Director Petra Seeger turns these investigations of the brain into a fantastic, heart-rendering cinema experience.

In its very first seconds, this film makes a promise, an almost uncanny promise: when you leave this theater after watching this film, you will no longer be the same person you were before. That would not be unusual if it merely meant reflecting on what you had seen – art incessantly demands that we do so. But in this cinematic portrait of Nobel laureate Eric Kandel, it literally means the transformation, the metamorphosis of the mind, and one quickly learns that these are not just empty words. As we watch the screen, we watch nature ply its craft: the craft of brain design.”

—Frankfurter Allgemeine Zeitung

“The film's greatness lies in the way it integrates the depictions of scientific events into the narrative of the subject's life rather than leaving them out. As a result, documentary film as a genre takes on a new dimension: a voyage through the skull as a journey through one man's destiny. We in the audience don't know whether to laugh or to cry – there is reason enough to do both.”

—Der Spiegel

“An extraordinary film about an extraordinary human being!”

—Hamburger Morgenpost

“Human warmth, not cool facts, is at the center of this moving portrait of a personality.”

—Weltexpress

“The film is a very personal portrait of a charismatic, passionate researcher who transformed his own painful experiences into incredible, positive energy in order to uncover the foundations of human interactions.”

—Filmecho Filmwoche

"In Search of Memory is a significant contribution to bridging the gap between world-class science and the layman.”

—Office of Science & Technology
Memories revisited

In Search of Memory: The Neuroscientist
Eric Kandel
Film directed by Petra Seeger
Showing in Austria.

Gérald filmmaker Petra Seeger met neuroscientist Eric Kandel by chance in Berlin two years ago, and was enthralled by his research and life story. An Austrian Jew forced to flee the Nazis in 1939, Kandel (pictured) is still coming to terms with his traumatic past. In Search of Memory, Seeger's 95-minute documentary of the mischievous 79-year-old, premiered on 26 May in Vienna, Kandel's childhood home.

In 2000, Kandel shared the Nobel Prize for Physiology or Medicine for his work on how neurons lay down memories. The film weaves Kandel's recollections and the science of learning and memory. Seeger accompanies him to Vienna to seek out his family's old apartment, his father's toy shop and other poignant places that he has avoided for fear of stirring up pain. Seeger's camera follows Kandel in mid-close-up. Re-enactments of his childhood are mixed with archive footage from 1930s Austria and contemporary scenes shot in his laboratory at Columbia University in New York.

Kandel recalls on screen the jubilant welcome of Hitler's troops as they marched into Vienna in March 1938. The following November, a few days after his ninth birthday, he witnessed the horrors of Kristallnacht, when rioters destroyed synagogues and Jewish premises. Instructed to leave their house, his family returned two weeks later to find that everything had been stripped from it, even his birthday toys. He recalls the collusion of many Austrians with the Nazis and the lack of support, or even sympathy, from former non-Jewish friends.

Those enduring memories fuelled Kandel's desire to understand the biological basis of memory. His approach was unfashionably reductionist. He chose as his model organism the sea slug Aplysia californica, which has just a few large nerve cells and a robust reflex— it withdraws its gills in response to stimulation. Kandel showed that the sea slug can learn to modify this reflex when repeatedly stimulated, and that the change is caused by strengthening of the synapses, the regions where neurons connect with each other.

Seeger mirrors that reductionist approach in her filming. She eschews high-tech animations, relying on Kandel to explain his science with only a flip chart and a large plastic model of the brain. His lab seems busy and his colleagues look happy: young researchers relate their own discoveries with moving enthusiasm. Scientists come across as vibrant people with pasts, sensitivities and futures— with stories to tell.

The naïve viewer may not take home many scientific details, but the documentary conveys the breadth of neuroscience and the scientific process. It describes different types of memory that arise in distinct parts of the brain, and the fundamental cellular process of synapse strengthening. Kandel's story shows that to reach the truth, you sometimes need to go back to basics before reconstructing the big picture.

Kandel laughs a lot as he confronts his past. In one memorable sequence in New York, he asks an old man seated on a chair in the street if he remembers his father's store. "What's your problem?" the old man barks. But within a minute they banter about their age, and laugh so infectiouslty that the audience laughs too. In another scene, Kandel's eyes brim with tears.

The strength and weakness of In Search of Memory, named after Kandel's book of the same name, is that it is uncritical, a love affair with this petite, demanding genius. The film manipulates its viewers into adoration. Scientists outside Kandel's lab barely get a mention. But the warmth of the film, together with the political and scientific importance of the subject, more than compensates.

Alison Abbott is Nature's Senior European Correspondent.
Petra Seeger  
Selected Filmography

2008  
In search of Memory  
Screenplay / Director / Producer

2006  
Bis zu der grossen Ewigkeit  
Director / Camera / Producer

2005  
Photo project / New York

2004  
Die besten Seiten von...  
Screenplay / Director / 2nd Camera

2003  
Vatersland  
Screenplay / Autobiographical feature film

2002  
Wim Wenders, BAP und der Oscar  
Director / Camera / Producer

2001  
Vill Passiert  
2nd camera for the cinema film by Wim Wenders about the rock group BAP

2000/01  
Die Schiller-Gang  
Director / Camera / Producer

1999  
380° Afrika  
Director
1997/98  Film is a Battleground
       Director /Producer

1996  Peter Zadek stages Harold Pinter’s “Moonlight”
       Director

1995  Nikolaikirche Leipzig
       (The Nikolai Church in Leipzig, the “base” of the demonstrations in October 1989)
       Director

1993  Zwischen allen Stühlen
       Director

1992  Ein Film kommt auf die Welt
       Director

1990  Abschied vom Drehbuch
       Director
       “Special event” at the Venice Film Festival (1991)

1984  Gratwanderung
       actress
       Director: Barbara Kappen

1984  Turin - Santo Stefano Belbo
       Co-director with Renate Sami

1984  Zwei Bilder
       Screenplay and actress
       Director: Rudolf Thome

1980  Schule im 3. Reich
       Co-director with Jürgen Heiter
       Documentary about the education system in the Third Reich.
       45 min. for WDR

1980  Der Bund Deutscher Mädel
       Director
Credits
In Search of Memory
The Neuroscientist Eric Kandel

written & directed by Petra Seeger
Director of Photography Robert Winkler
Mario Masini
Sound Mario Sternisa
Rafael Tyblewski
Editor Oliver Neumann
Executive Producer Petra Seeger
Commissioning Editors Andrea Ernst  WDR/ARTE
Klaus Hipfl  ORF
Jutta Krug  WDR
Soundmix Christofer Frank
Soundeditor Nina Slatosch
Karin Hammer
Assistent Editor Reinhard Schwaiger
Trainee Alexander Peiler
Offline Editing Off-Line, Vienna
Sound Recording Sync-Sound Studio, New York
Tremens Tonstudio, Vienna
Tone Town, Vienna
Video Postproduction Kurt Hennrich
Postproduction Manager Johannes Fiala

“Memories” Scenes
Eric Emanuel Schierl
Mother Angelika Kropej
Father Markus Griefing
Brother Konstantin Petricek
Mitzi Viktoria Müller
Casting Angelika Kropej

Set Design Tommy Vögele
Costume Design  Sammy Zayed  
Make Up Artist   Christian Kahrer  
Monika Watzek  
Assistent Set Design  Regina Rauter  
Assistent Costume Design  Barbara Zach  
Nelma Kalonji  
Production Manager  Igor Orovac  
Location Manager      Christian Ringswirth  
Service Producer              Robert Winkler, Bonusfilm GmbH  
Trainee    Victoria Müller  
Catering   Irene Pöhl, Kutschkermarkt  
Driver                Joschi Deininger

the film was shot in  
New York (USA), Vienna (Austria), Paris and Cahors (France), London (UK)

Eric Kandel is  
University Professor / Columbia University, New York and  
Senior Investigator at the Howard Hughes Medical Institute

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Associate Research Scientists
Juan Marcus Alarcon, Christoph Kellendonk,  
Francisco Monje, Isabel Muzzio, Michael Rogan, Eleanor Simpson,

Postdoctoral Fellows
Stefan Kassabov, Daniela Pollak, Joseph Rayman,  
Harshad Vishwasrao, Lee Zuckerman

Privyamvada Rajasethupathy  MD/Ph.D. candidate

Aaron Beck, Yvonne Féraud, Josef Grasser, Michael Hudecek, Anna Müller, Irene Pöhl, Inge Scholz-Strasser, Rabbi Marc Schneier , Andreas Stadler, Martin Stolar, Micky Stunkard, Doron Weber, Kurt Weiss
Archiv Material
Bundesarchiv / Transit Film GmbH
Chronos Media
Sveriges Television, Sweden

“Wintertime with Kandel”
by Anna Müller and Martin Rabl

“Kandels Reise”
Music by Walter W. Cikan and Marnix Veenenbos

“Broken Monitors”
“Aldebaran Waltz”
Music by B. Fleischmann

“Glasharp”
Music by Petr Spatina
a courtesy by Goodwatermusic

dedicated to
Dr. Hildegard Köhle

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