

Movies on the brain from Jacobson and Marcus (Integrated Neurosciences 2003 and Neuroanatomy for the Neuroscientist 2008)

Developmental Disorders

Mental Retardation. Film: *Charly*

In this film, released in 1968, a mentally retarded man Charley (Cliff Robertson, who won an Academy Award) develops remarkable intelligence after experimental brain surgery, but then begins to slip back to his former state. Claire Bloom plays his case worker with whom the intelligent Charley has a romance. The movie is based on the novel by Daniel Keyes: *Flowers for Algernon*.

A Blind Deaf and Mute Infant after Fever. Film: *The Miracle Worker*

This film, released in 1962, depicts the story of the young 7-year-old Helen Keller, played by Patty Duke, and of her teacher Annie Sullivan, played by Anne Bancroft, who taught the child to communicate initially with touch. Both received Academy Awards. Although Helen Keller never attained hearing or sight, she did graduate from Radcliffe College with honors in 1904. The director was Arthur Penn; movie adapted by William Gibson from his play and based on the autobiography of Helen Keller *The Story of My Life*.

Autism. Movie: *Rain Man*

In this film, released in 1988, an ambitious young man (played by Tom Cruise) discovers, when his father dies, that he has an autistic older brother (played by Dustin Hoffman) who has been institutionalized for years. He needs him to claim the inheritance. He liberates him from the institution and they set off cross-country. As they travel, the relationship between the brothers evolves. The film and screenplay won Oscars, as did Dustin Hoffman and the director Barry Levinson.

Spinal Cord/Brain Stem Disorders

Traumatic High Cervical Spinal Cord Transection Producing Quadriplegia: Ethical Issues: The Rights of the Patient to Make Decisions About How Long to Continue Life Support. Film: *Million Dollar Baby*.

This film, released in 2004, concerns a woman of 32 years (played by Hilary Swank) who trains to be a boxing champion. In the championship fight she is fouled by the other boxer and sustains a cervical 1-2 transection. The last third of the film deals with the ethical questions involved in the decision to discontinue life support in a patient who is conscious and can clearly express her wishes. The film, Swank (Best Actress), Morgan Freeman (Best Supporting Actor), and Clint Eastwood (director and producer) won Oscars. Eastwood, the co-star, was also nominated but did not receive an Oscar as Best Actor.

Thoracic Spinal Cord Injury. Film: *Passion Fish*

In this film, released in 1992, a soap opera actress (played by Mary McDonnell) sustains a thoracic spinal cord injury in a New York taxi accident, resulting in paraplegia. She is reduced to an embittered wheelchair existence. With the help of a strong nurse (played by Alfre Woodard), she must face up to her disability.

Poliomyelitis (FDR Subsequently Died of a Hypertensive Intracerebral Hemorrhage). Film: *Sunrise at Campobello*

This film, released in 1960, traces the career of a wartime president Franklin Roosevelt (portrayed by Ralph Bellamy). Who, after serving as Assistant Secretary of the Navy and running for Vice President, developed poliomyelitis. He overcame this severe disability to become governor of the state of New York. Eleanor Roosevelt was portrayed by Greer Garson. The original play from which the film

was adapted received a Tony Award. A later dramatization of the personal lives of the two and of the impact of polio was presented on television in 1976. The film entitled *Eleanor and Franklin* was based on the book by Joseph Lash and starred Edward Hermann and Jane Alexander.

Amyotrophic Lateral Sclerosis. Film: *Pride of the Yankees*

This famous 1942 movie provided a biography of the famous baseball player Lou Gehrig, who died with amyotrophic lateral sclerosis. His record for career grand slam home runs and of single-season runs batted in for the American League remain to this day. The film starred Gary Cooper as Lou Gehrig and Theresa Wright as his wife. Former teammates Babe Ruth, Bill Dickey, and Bob Meusel also appeared. A later retelling of the story (*Love Affair: The Eleanor and Lou Gehrig Story*) appeared on television in 1977 and starred Edward Hermann and Blythe Danner.

Amyotrophic Lateral Sclerosis. Film: *Tuesdays with Morrie*

This made-for-TV movie presented in 1999 was based on a real-life drama. A sports writer, Mitch Albom (played by Hank Azira), in Detroit finds out that his old college professor in Boston, Morrie Schwartz (played by Jack Lemmon), has developed ALS. He visits the professor and they undertake a series of weekly discussions regarding life, purpose, and death.

Disorders of Motor Systems and Motor Control

Cerebral Palsy: Spastic Diplegia and Choreo-Athetosis. Film: *My Left Foot*

This film, released in 1989, was based on the autobiography of a young Irish writer/artist Christy Brown, who had with severe cerebral palsy. Using his left foot, the only extremity over which he has voluntary control, he teaches himself to write and goes on to become an acclaimed writer and painter. Daniel Day Lewis played Christy Brown and won an Academy Award for Best Actor. Brenda Flicker (Academy Award for Best Supporting Actress) played his very supportive mother, who recognizes that he is not an imbecile and insists on integrating him into her large family.

Parkinson's Disease. Film: *Awakenings*

This 1990 film was based on a book by the neurologist Oliver Sacks (played by Robin Williams) concerning his experiences at a chronic disease hospital in the initial treatment of postencephalitic Parkinsonism with an apparent miracle drug l-dopa. Leonard, the youngest patient treated, was played by Robert Di Niro. Julie Kravner played the experienced nurse who knows more about the patients than the neophyte physician. Both the effects and the subsequent complications and loss of effect of the drug are shown.

Foreign Arm/Hand Syndrome Film: *Dr. Strangelove or: How I Learned to stop Worrying and Love the Bomb*

This classic film, released in 1964 and directed by Stanley Kubrick, dealt with one of the great fears of the Cold War: a nuclear confrontation between the great powers, the United States and the Soviet Union. The National Security Adviser or Dr. Strangelove has been injured during World War II. As a result, he is confined to a wheelchair and has a prosthetic right hand. At times of stress he cannot control the right arm, which performs in a foreign manner, taking on postures that reflect his previous life as a Nazi leader and adviser. Peter Sellers in a remarkable performance portrayed three characters: Dr. Strangelove as well as the sensible Canadian Group Captain Mandrake and the American President Maffley. George Scott played the American Air Force Commander General Buck Turgedson, a character based on General Curtis LeMay, who masterminded the fire bombing of the Japanese cities in World War II. He was one of the hawks of the Cold War. Sterling Hayden played General Ripper, the squadron commander. The nuclear confrontation is triggered when General Jack Ripper sends off a squadron of nuclear armed B52 bombers. He is concerned

with a plot by the Soviets to rob Americans of their vital fluids and he aims to preserve “the purity of essence.”

Obsessive–Compulsive Disorder, Psychosis and Posttraumatic Disorder with Complex Partial Seizures: Film: *The Aviator*

This film, released in 2004, is a biographic study of the early adult life of Howard Hughes (Leonard De Caprio), a brilliant filmmaker, airplane designer, test pilot and aviation record holder who, unfortunately, was increasingly incapacitated by a severe obsessive–compulsive disorder, periods of psychosis, and, in the film, episodes characterized by speech automatisms and confusion. He produced and/or directed *Hell's Angels*, *Scarface*, and *The Outlaw*. Hughes was involved in romances with several Hollywood actresses: Katherine Hepburn (Cate Blanchet), and Ava Gardner (Kate Beckinsale), Jean Harlow (Gwen Stefani), possibly but probably only from a professional standpoint), and Jane Russell, only professionally. The film was directed by Martin Scorsese and also featured Alan Alda as Senator Brewster and Alex Baldwin as Juan Trippe, the founder and CEO of Pan American Airways.

Obsessive–Compulsive Disorder Plus Personality Disorder. Film: *As Good as It Gets*

This film, released in 1997 and directed by James L Brooks, concerns the romance of an unpleasant obsessive–compulsive novelist and the only person who can tolerate his behavior, a waitress at his favorite local restaurant. He can only sit at his table and be waited on by his waitress. During the course of the film, his behavior improves and his attitudes change. Jack Nicholson played Melvin Udall, the writer with an obsessive–compulsive disorder. He received an Academy Award as Best Actor. Helen Hunt played Carol, the waitress, and received an Academy Award as Best Actress.

Huntington's Disease. Films: *Bound for Glory* and *Alice's Restaurant*

The first film, released in 1976, presented an excellent biography of the famous American song writer and folk singer Woody Guthrie (portrayed by David Carridine) for the period 1936–1940 a time of protest and union-organizing activities. He subsequently manifested the progressive neurological disease Huntington's disease characterized by a movement disorder and cognitive changes. The film does demonstrate the personality changes already beginning to occur.

The second film, released in 1969 and directed by Arthur Penn, is centered on another period of protest, the hippie era of the late 1960s, when the Vietnam War, the draft, drugs and free love were prominent issues. Arlo Guthrie, Woody's son and also a folk singer, and Pete Seeger, the folk singer, played themselves. The terminal bed-ridden stages of Woody's progressive Huntington's disease are demonstrated.

Limbic System

Prefrontal Lobotomy/Psychosurgery. Film: *Suddenly Last Summer*

This film, released in 1960 and directed by Joseph Mankiewicz, was adapted from the play by Tennessee Williams “Suddenly Last Summer.” A wealthy woman, played by Katherine Hepburn, has arranged for her niece, played by Elizabeth Taylor, to be committed to a state mental hospital in the deep South because of her supposed delusions and hallucinations regarding the death of the woman's son at the hands of cannibals. She attempts to have the young neurosurgeon at the hospital, played by Montgomery Cliff, perform a psychosurgical procedure to eliminate the “delusion and hallucinations.” She is willing to endow the psychosurgery program at the institution. The neurosurgeon discovers that the delusions are in fact true. He faces the ethical dilemma of having to say “no” to the wealthy donor.

The Effects of Neuroleptics, Electroshock Therapy and the Complications of Prefrontal Lobotomy. Film: *One Flew over the Cuckoo's Nest*

This film, released in 1975, was the first film since the 1934 film *It Happened One Night* to win all five major Academy Awards: Best Picture, Best Actor (Jack Nicholson), Best Actress (Louise Fletcher), Best Director (Milos Forman) and Best Screenplay (Ken Kesey). The film concerns a patient who enters an insane asylum to

escape prosecution for his criminal activities. He inspires the other inmates of his ward to assert themselves, upsetting the ward routine dictated by a rigid strong-willed nurse. Unfortunately, the system deals with his behavior by altering his neurological function by means of medications, electroshock, and, eventually, a prefrontal lobotomy. After that surgery, he is left in an abulic, poorly responsive bed-ridden state.

Cerebrovascular Disease

Massive Stroke. Film: *Wilson*

This film, released in 1944, which was a critical success but a box office failure, traces the political career of an actual American President, Woodrow Wilson (Alexander Knox). After a career as a Professor of History at Princeton University, he became president of that institution, then governor of New Jersey, and then President of the United States in 1912. As president, he “kept us out of war” but then entered a war (World War I) “to make the world safe for democracy.” At the conclusion of that war, while campaigning for acceptance of the peace treaty, he sustained a massive stroke resulting in a severe left hemiparesis and cognitive changes. His wife (Geraldine Fitzgerald) played a major role in limiting access to the president and helping him to make decisions during this period of actual but undeclared presidential disability.

Massive Stroke Producing Irreversible Coma. Film: *Dave*

This 1993 film concerned a presidential look-alike who is asked to impersonate the actual president at a function so that the president can keep an assignation with his mistress. During the tryst, the actual president suffers a massive stroke, resulting in a state of irreversible coma. The fill-in is manipulated to continue the impersonation by a presidential adviser who hopes to thus control the power of the position. However, the impersonator takes on a life of his own and begins to make decisions in the public interest. Five actual US senators had cameo roles in this film, as did the McLaughlin group, Larry King, and Oliver Stone. Kevin Kline played Dave, the impersonator, and the President and Sigourney Weaver played the President’s wife.

Brain Trauma

Neurological Disorder: Traumatic Frontal Lobe Injury. Film: *Regarding Henry*

This film, released in 1991 and directed by Mike Nichols, dealt with the disturbances in memory and personality in a high-powered lawyer following a bullet wound to the brain. “I remember a woman in a blue dress standing on grass. I think it’s my mother but I’m not certain it’s my mother” Whereas previously he manipulated the truth, cheated on his wife, and had a terrible relationship with his daughter, he now became an honest man with solid relationships with his wife and daughter. He concludes that he can no longer be a lawyer. Harrison Ford played Henry Turner, the lawyer, and Annette Benning played his wife.

Posttraumatic Short-Term Memory Loss due to Right Temporal Lobe (Hippocampal) Damage Which Spares her Amygdala. Film:

50 First Dates (A.K.A 50 First Kisses)

In this recent film, a romantic comedy released in 2004, a veterinarian in Hawaii, Henry Roth (Adam Sandler) falls in love with a charming young lady, Lucy (Drew Barrymore). She has had a head injury in an auto accident and has a short-term memory loss. So, each day she awakens with no memory of the previous day. Every day her family re-creates the last day she remembers. The veterinarian has to woo her again each day starting from scratch. According to the psychologist, “scar tissue” in the temporal lobe prevents her from converting short-term memories to long-term memories during sleep. Much more realistic is the portrayal of “10 second Tom,” who had a hunting accident (shot in the head) after which he has only working memory and can remember no longer than 10 seconds. The cast included Dan Aykroyd as

Dr Keats, the psychologist who is the memory expert at the brain trauma institute. Watch him interpret MRIs. Sean Astin and Rob Schneider star in other roles.

Brain Trauma Producing Coma. Film *Fantastic Voyage*

This science fiction film released in 1966 concerns a defecting Russian scientist who sustains a significant head injury in a vital but relatively inaccessible brain region. In order to correct the lesion with the least possible damage, a crew, including a neurosurgeon and his nurse, are placed in a remarkable submarine that is then reduced to microscopic size and injected into the vascular system. Stars on the voyage included Raquel Welch, Stephen Boyd, Arthur Kennedy and Donald Pleasance, with Edmond O'Brien as the commander of the facility.

Brain Tumors and Increased Intracranial Pressure

Brain Tumor. Film: *Dark Victory*

In this classic movie of 1939, from Warner Brothers, the hero, Dr. Frederick Steele (George Brent), the most successful neurosurgeon of New York, decides, after 9 years of sending flowers to the funerals of his patients with gliomas and other brain tumors, to close his practice and to return to medical research. He poses the question "Why do healthy cells go berserk producing gliomas." He will work in the laboratory that he has established at his farm in Vermont, where he will culture cells from the brain. "Some day some one will discover a serum like insulin." The concept, while true in terms of gliomas of the brain, was extraordinary for the time. The film provides a notable depiction of the symptoms of increased intracranial pressure. The film also reflects the prevailing concept of the time regarding what a patient with incurable disease was to be told about their prognosis. Bette Davis played the heroine Judith Terherne the young beautiful and wealthy socialite patient with a glioma in love with her neurosurgeon. The performance by Bette Davis, who had previously won two Academy Awards, is considered one of her finest. Although nominated for an Academy Award, she did not win; 1939 was the year of *Gone with the Wind*. She was also nominated for her other remarkable performance in *All About Eve* in 1950 but did not win. The actors and actresses reflected almost the full acting company of the studio system at Warner Brothers, including Humphrey Bogart, Ronald Reagan, Henry Travers as the caring sympathetic general practitioner Dr. Parsons, and Geraldine Fitzgerald as the close friend and secretary. This film provided Ronald Reagan with his worst role portraying a drunken playboy, followed by Bogart as her Irish horse trainer.

Other films concerned with brain tumors include *Crisis*. In this film, released in 1950, a famous somewhat cynical American neurosurgeon (played by Cary Grant) vacationing with his wife in a Latin American country is forced to operate on a paranoid and oppressive dictator (played by Jose Ferrer) with a brain tumor (frontal) while his wife is held hostage. The patient's recovery is complicated by a successful revolution led by Gilbert Roland.

Glioma in an Adolescent. Film: *Death Be Not Proud*

In this 1975 film made for television, an adolescent (played by Robby Benson) is treated for a malignant glioma. The film, which starred Arthur Hill and Jane Alexander as the parents, is based on the true story by John Gunther concerning his son's illness and death at age 17.

Infections

Severe Neurological Disability and Death Following Partially Treated Bacterial Meningitis. Film: *The Third Man*

In this classic film, released in 1949, Holly Martins, an American writer of Western pulp fiction (played by Joseph Cotton), arrives in Vienna at the invitation of his best old friend Harry Lime (played by Orson Welles), to find that the old friend might have been murdered. He also eventually discovers that the old friend

has been the author of a complex black market scheme in which penicillin has been stolen from the Children's Hospital and the solutions diluted. As a result, children with bacterial meningitis have died or have been left in a state of severe neurological disability. The film is notable for the haunting musical score provided by Anton Karas on an unaccompanied zither. The cast included Trevor Howard as Major Calloway, the British military police director who knows the real evil posed by Lime, Bernard Lee as the British military police sergeant who is an admirer of Westerns and is shot by Lime in the sewers of Vienna during the climatic pursuit, (he later played M in the James Bond films) and Wilfred Hyde-White, the British cultural attaché who manages to enjoy all that Vienna has to offer. Alida Valli played Anna, Harry's girl friend, an central/eastern European refugee with false documents whom the Russians wish to deport to her native country now under Communist control. The director was Carol Reed and the screen writer was Graham Greene.

Neurosyphilis (General Paresis) Producing Dementia and A Change in Personality. Film: *Young Winston*

This film, released in 1972 and directed by Richard Attenborough, depicts the childhood and early adult life of the famous British politician Winston Churchill, played by Simon Ward, who trained as a military officer at Sandhurst but later pursued a career as a combat reporter and author. He subsequently rose to political prominence just prior to and during World War I as the First Lord of the Admiralty. Our interest here is in his father, Lord Randolph Churchill, played by Robert Shaw, who at the peak of a brilliant political career as Lord of the Exchequer began to demonstrate, in his late thirties/early forties, erratic behavior and a progressive impairment of his mental and physical capacities, all of which is extensively demonstrated in the film. His wife, portrayed by Anne Bancroft (remember Mrs. Robinson in *The Graduate* and Annie Sullivan in *The Miracle Worker*), was told that the disorder was an inflammation of the brain and that intimate contact with the patient was to be avoided. The film received the 1973 Golden Globe Award as Best Foreign Film. Ward bore a remarkable resemblance to the young Churchill. The cast included a veritable gallery of fine English actors portraying various politicians, journalists, and military leaders: John Mills, Jack Hawkins, Ian Holm, Patrick Magee, and Edward Woodward. The movie was actually based on Winston Churchill's autobiography *My Roving Life: A Roving Commission*.

Syphilis. Film: *Dr. Ehrlich's Magic Bullet*

This film, released in 1940, presented a biography of Dr. Ehrlich (played by Edward G. Robinson), the physician who helped to develop a treatment for diphtheria and then went on to develop a treatment for syphilis, which was utilized until penicillin came into use. There were questions at the time as to whether the film should be released, but the US Public Health Service supported the release of the film. Robinson was more famous for his role of Rico in the 1930 drama *Little Caesar*.

Toxic and Metabolic Disorders

Metabolic Induced Psychosis. Film: *The Hospital*

This film, released in 1971, concerned the sequence of mis-adventures that befell a healthy retired physician, Dr. Drummond (played by Bernard Hughes), admitted to a major teaching hospital, the Manhattan Medical Center, for a routine medical checkup. He undergoes an unnecessary renal biopsy, has a botched nephrectomy, following which he has an allergic reaction and develops renal failure, resulting in coma. He recovers from coma but continues to present a picture of pseudo-coma. He now manifests a highly developed paranoid psychosis with hallucinations. With the assistance of the hospital's own inefficient systems and the incompetence of multiple house officers, attending physicians, and nurses, he begins to secretly eliminate the physicians and nurses who have caused the various

mishaps. The chief of medicine of the hospital Dr. Bock (George Scott), who has his own problems of excessive alcohol intake, impotence, and depression, attempts to sort out the series of deaths, assisted by Dr. Drummond's daughter (played by Diana Rigg). The film also featured Richard Dyshart as Dr. Welbeck, the incompetent urologic surgeon more interested in business than in quality of care, and Nancy Marchand as Ms Christie, the director of the nursing service who has to deal with multiple incompetents. She was later cast as the matriarch of the *Sopranos*.

Filmed at Metropolitan Hospital in New York, the movie exposed the problems of operating a large city teaching hospital at a time of fiscal restraints and inner-city conflicts. The screenplay was written by Paddy Chayefsky (Academy Award).

Drug Addiction: Barbituates Plus. Film: *Dead Ringers*

This disturbing film, directed by David Cronenberg and released in 1988, was based on a real series of events and concerns the fictional named identical twins Elliot and Beverly Mantle, both played by Jeremy Irons). They are brilliant students from Toronto, educated and trained at Harvard, and now back in Toronto as academic gynecologists working together. They share their medical patients, research, and women. One, Elliot, is confident and ruthless; the other, Beverly, is modest and sensitive. A failed love affair with an actress, who is a patient with a congenitally malformed uterus, triggers a descent into mental collapse and barbiturate addiction. Both die, possibly as a result of drug overdose or barbiturate withdrawal or murder and suicide. The real-life twins were Stewart and Cyril Marcus, who were recruited from Harvard to the Cornell New York Hospital. Jeremy Irons won the New York Film Critics Award for Best Actor and Genevieve Bujold won the award as Best Supporting Actress.

Cocaine Addiction. Film: *The Seven-Percent Solution*

This film, released in 1987, combines the activities of the most famous fictional detective, Sherlock Holmes (portrayed by Nicol Williamson), with the real-life detective of the mind, Sigmund Freud, portrayed by Alan Arkin. *The Seven-Percent Solution* refers to the usual solution of cocaine. The plot concerns the addiction of Sherlock Holmes and of the damsel in distress (played by Vanessa Redgrave), as well as the background of Holmes's obsession with Professor Moriarty (Lawrence Olivier). Freud's early methods of analysis are portrayed, as well as his work with cocaine and cocaine addiction. Dr. Watson is played by Robert Duvall. Joel Grey played one of several villains. The author of the original book and screenplay, Nicholas Meyer, has resurrected the characters originally created by Dr. Arthur Conan Doyle.

Acute Arsenic Poisoning and Criminal Psychosis. Film: *Arsenic and Old Lace*

This film, directed by Frank Capra, was produced in 1941 but not released until 1944. Gary Grant portrays a drama critic, Mortimer Brewster, who finds that his two dear old aunts are poisoning lonely old men with arsenic in a solution of elderberry wine. Among his not-so-normal relatives are the escaped criminally insane cousin Jonathan Brewster (Raymond Massey) and Teddy (John Alexander), a Brewster cousin who believes that he is Teddy Roosevelt building canals in the basement. The two aunts are portrayed by childlike Josephine Hull and the more intelligent Jean Adair. Peter Lorre portrays the plastic surgeon of the criminal madman Jonathan Brewster and Edward Everett Horton plays the psychiatrist who locks up almost all of these characters by the end of the movie. The screenwriters for this romp were Julius and Philip Epstein. (They also did the screen play for *Casablanca*.)

A Metabolic Disorder (Porphyrin). Film: *The Madness of King George*

This film, released in 1994, concerns the effects of porphyria on the brain of a government leader, King George III (portrayed by Nigel Harthorne), "who had lost the American colonies." The effects on his family interactions and on the affairs of government are chronicled. The movie also provides information on the treatment of medical and mental disorders in 1788. Helen Mirren portrays his wife, Queen Charlotte. She is more famous for her portrayal of a police inspector in a series of

television dramas, and in 2006, she has provided a remarkable performance as Queen Elizabeth II. She had been previously knighted by the Queen for her contributions to the cinema.

Mercury Poisoning. Film: *Alice in Wonderland*

Various films, both with real and cartoon actors, have been made of this story by Lewis Carroll, which features, among other characters, an individual with mercury poisoning resulting in psychosis acquired in the hatting industry: the Mad Hatter. Actually, cerebellar effects producing the hatters shakes were more common than the cerebral/psychotic involvement.

Effects of Hallucinogens and Sleep Deprivation. Film: *Altered States*

In this film, released in 1980, a research professor (played by William Hurt) hopes to discover the inner self. He takes hallucinogenic drugs and subjects himself to sensory deprivation with severe alterations in his behavior.

Disorders of Myelin

Neurological Disorder: Progressive Multiple Sclerosis. Film: *Jackie and Hilary*

This film, released in 1998, was based on the real-life story of an outstanding cellist, Jacqueline Du Pre (Emily Watson), her relationship with her sister and their husbands, and her decline and death after developing progressive multiple sclerosis. The early symptoms of change in behavior, cerebellar ataxia and urinary incontinence, as well as her progressive decline are well demonstrated in the second half of the film. Rachel Griffiths played Hilary, her sister, who was also an excellent musician (flutist). The husband was the famous conductor Daniel Barenbom.

Adrenoleukodystrophy: A Disorder That Affects Brain, Spinal Cord, and Peripheral Nerves as Well as the Adrenal Gland. There Is Defective Formation of Myelin. Film: *Lorenzo's Oil*

This film, released in 1992, was based on a true story of a 5-year-old boy with adrenoleukodystrophy and the determined efforts of his mother and father, portrayed by Susan Sarandon and Nick Nolte, to find a cure.

Memory

Alzheimer's Disease. Film: *Iris*

This film, released in 2001, was based on real lives and chronicled the love story of two English writers from their early days at Oxford in the 1950s to Iris' long decline and death from a progressive neurological disorder in 1999. The wife, Iris Murdock, was both a novelist and philosopher. The film won an Academy Award for Best Supporting Actor and several British Academy Awards and Golden Globe awards. This film has also been recognized by the Alzheimer's Association as providing the most realistic portrayal of the problems of this disease from the standpoint of the patient and family. Iris Murdock was portrayed as the young scholar by Kate Winslet and as the mature scholar and writer by Judi Dench. Jim Broadbent portrayed John Bayley, her husband and biographer (Oscar for Best Supporting actor).

Short-Term Memory Loss. Film: *Memento*

In this thriller, released in 2000, a man searches for the killer of his wife. The plot is rather twisted since the protagonist has a problem: Since the attack in which he also sustained severe head trauma, he forgets current events after 15 minutes. As a remedy, he has tattooed the essential information on his body and leaves Post-its and Polaroids about of the usual suspects.

Gone With the Wind. 1939. This blockbuster Academy Award winner does include a sequence of scenes in which Scarlett O'Hara (Vivian Leigh) returns home to the devastated plantation Tara to find that her father (Thomas Mitchell), age 65,

is confused, delusional, and demented. She must take responsibility for the management of the estate if the entire family and their dependents are to survive. The cast of thousands also included Clark Gable as Rhett Butler, Leslie Howard as Ashley Wilkes, Olivia De Havilland as Melanie Wilkes, and Hattie McDaniel as her wise nanny (Academy Award for Best supporting Actress). The picture, Vivian Leigh, Director and Producer all won Academy Awards in 1939.

Seizures and Epilepsy

Temporal Lobe Seizures with Secondary Generalization. Film: *The Terminal Man*

In this 1974 film, a patient, a computer engineer with frequent seizures played by George Segal, has a computer-controlled stimulator implanted in his brain, designed to interfere with seizure discharges. It malfunctions and actually triggers seizures during which he inadvertently kills several people. Richard Dysart plays the neurosurgeon who conceives of computer control of seizures. The screen writer was Dr. Michael Crichton. He was a Harvard medical student and based his book on the actual work of Mark and Ervin at Harvard Medical School, which was published as *Violence and the Brain*.

Posttraumatic Focal Motor Seizures with Secondary Generalization. Film: *Cleopatra*

In this film, released in 1963, the manipulative, well-endowed, and well-educated young woman ruler, Cleopatra (Elizabeth Taylor), secretly witnesses the posttraumatic seizures of a visiting military leader, Julius Caesar (Rex Harrison).

Generalized Convulsions and Learning Disabilities. Film: *The Lost Prince*

This premiere presentation of Masterpiece Theater's 2004 season was based on true events and recalls a long-ago Europe when most of the royal houses were related as cousins. The youngest child of the ruling King and Queen (Miranda Richardson) of England born in 1905 suffers from epileptic seizures and learning disabilities. He is sent off to live in the country away from public gaze, supervised by a dedicated Nanny (Gina McKee). As an adolescent, he dies after a prolonged seizure. A series of generalized seizures, post-ictal states, and the effects of the poorly controlled seizures on his cognitive functions are demonstrated. The attitudes of the medical experts, the family, and the public regarding epilepsy are demonstrated. The film includes remarkable performances by two boys as the prince: Daniel Williams and Matthew Thomas.

Seizures Induced by Photic Stimulation and Sleep Deprivation. Film: *The Andromeda Strain*

In this film, released in 1971 and based on the Michael Crichton novel, concerns a group of scientists who are working together in a secret government facility attempting to deal with a deadly biologic agent. The woman scientist has a generalized convulsive seizure triggered by intermittent photic stimulation and possibly related to sleep deprivation. Among those fighting the biologic agent are Arthur Hill, David Wayne, James Olson, and Kate Reid.

Lust For Life. 1956. The life of Vincent Van Gogh, who certainly had a bipolar disorder and might possibly have had complex partial seizures. The film is remarkable not only for the performances of Kirk Douglas and Anthony Quinn (as his friend Gauguin) but also for the number of paintings presented in color. A hyperreligiosity at an early stage of his career is suggested.

Coma

Anoxic Encephalopathy. Film: *Coma*

In this movie, released in 1978, written by Dr Robin Cook and directed by Michael Crichton, MD, young healthy patients are experiencing hypoxia during the

anesthesia for elective surgery at Boston Memorial Medical Center. A young and very competent surgical house officer, Dr. Susan Wheeler (Genevieve Bujold) discovers the series of patients reduced to a vegetative state of irreversible coma after an “anesthetic accident” involving her closest friend (Lois Chiles). As she pursues the solution to this mystery, her own life is threatened and she also comes close to ending up at the Jefferson Institute for patients in irreversible coma, where body parts are salvaged for transplantation. The cast includes Michael Douglas as her boyfriend/senior resident, who is anxious to move ahead in the medical hierarchy to become the chief surgical resident and is not interested in making waves, and Richard Widmark as Dr Harris, the chief of the surgical service, who has built a great institute and transplantation program that requires a source of body parts.

Irreversible Coma Following Insulin Overdose. Film: *Reversal of Fortune*

In this film from 1990, based on an actual case, a wealthy woman Sunny von Bulow (Glenn Close) lies in irreversible coma in a New York hospital after a nearlethal overdose of insulin, which might have been administered by her husband Klaus von Bulow (Jeremy Irons, Academy Award as Best Actor) or, then again, she might have self-administered the insulin and he is being framed for her murder. The movie centers on the appeal and second trial of her husband, who is defended by a famous Harvard law professor, Alan Dershowitz (Ron Silver). Barbet Schroeder directed based on the book by Alan Dershowitz.

Anesthetic Accident Producing Anoxic Encephalopathy with Irreversible Coma. Film: *The Verdict*

This film, released in 1982, is based on an actual case in Boston, although, for dramatic effects, the institutional location has been transposed. A down-on-his-luck alcoholic lawyer Frank Galvin (Paul Newman), attempts to find justice for his client, a previously healthy woman who entered a prominent hospital of the archdiocese for a routine delivery. She receives the wrong anesthetic agent and remains in a state of irreversible coma. In the search for justice, he must battle the establishment forces of organized religion, medicine, and the law. He is assisted or opposed by the following actors Jack Warden, James Mason, and Milo O’Shea.