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Eternal Sunshine of the Spotless Mind and the Cultural History of the Self

The German title of the film that is in English cryptically entitled *Eternal Sunshine of the Spotless Mind* (2004) is admirably well found. *Vergiß mein nicht!* evokes a pretty, small bright blue spring flower. The flower is known in many languages by a similar term (e.g. Spanish »nomeolvides«, English »forget-me-not«); curiously, the supposedly romantic French, where the name is said to have originated, has no equivalent, and calls the flower by its genus, *myosotis*. In the middle ages, the flower was believed to have the power of ensuring that those who wear it would not be forgotten by their lovers; one legend derives its name from a drowning knight's call to his lady. By breaking up into separate words the flower's name (*Vergissmeinnicht*) and giving it the form of an imploration (»Don't forget me!«), the German title refers to the core dramatic themes of the film, further evoked by the associations of *myosotis* with loss, remembrance and the physical end and emotional continuance of love. It also underlines the connection between psychological memory acts and a concrete, if fragile, object, something that will turn out to be significant. In short, while the crassly unpoetic Italian *Se mi lasci ti cancello* (»If you leave me, I'll erase you«) could be the title of a second-rate slapstick comedy, and the similar-sounding Spanish *¡Olvidate de mí!* (»Forget me!«) says exactly the opposite of what it should, the title *Vergiß mein nicht!* is perfectly adapted to the film it names.

Directed by Michel Gondry, a successful creator of commercials and video clips, and written by Charlie Kaufman, author of the script of Spike Jonze's *Being John Malkovich* (1999), *Eternal Sunshine* illustrates the »maze cinema« style, where the narration begins at the end and meanders

towards the point of departure, as well as the »mindscreen« narrative technique that displays on screen the contents of a character's mind.¹ The story, for which Kaufman won an Oscar in the category of original screenplay, evolves in different times and reality dimensions, moving non-linearly between past, future and present moments, abruptly changing perspectives and viewpoints, casting about various fragments of existence, and shifting without transition between parallel »external« and »internal« realities. To tell the story, Gondry favored editing, voice-over, light, focus and camera movement over special effects. The result is a visually interesting, though labyrinthine and sometimes redundant film.

Eternal Sunshine has been described as a romantic comedy or thriller, as a celebration of love, memory and the possibilities of a second chance. These are appropriate first approximations, but they limit themselves to the plot. Beneath the romance, the film engages with a notion that has become dominant since the mid-twentieth century: the »cerebral subject.« Humans are cerebral subjects as a consequence of being considered as essentially reducible to their brain; numerous discourses and practices assume that this organ is the only part of the body we need in order for each of us to be ourselves. The person is here defined by the property of »brainhood,« i.e. the property or quality of being, rather than simply having, a brain.² At least since James Whale's classic *Frankenstein* (1931), many movies have dealt with the relationship of brain, body and self; film has become one of the mechanisms by which modern culture elaborates that relationship, most often in ways that substantiate the ideology of the cerebral subject.

It should come as no surprise, in the early years of the so-called Century of the Brain, and at a time when inflated or futuristic claims for the impact of the neurosciences on our »view of man« find a weekly echo in magazines and newspapers, that a film dealing with self and memory should somehow

fit the trend. *Eternal Sunshine*, however, deserves to be singled out. Other movies are of course significant, but, in contrast to most of them, *Eternal Sunshine* approaches brainhood issues less by means of plot, dialogue and science fiction notions and visuals, than through the use of properly cinematic means.

Any summary is bound to straighten out the plot: Joel Barish (Jim Carrey) discovers that his ex-girlfriend, the temperamental Clementine («Clem») Kruczynski (Kate Winslet), has had him and their failed relationship erased from her memory. Enraged, he decides to undergo the same procedure at Lacuna Inc., the enterprise where Dr. Howard Mierzwiak (Tom Wilkinson) applies the «focused erasure» of troubling memories.³ This is no drinking of Lethe's waters, but a circumscribed surgical procedure, a sort of physical equivalent of «Dianetics», the Scientologists' therapy for «clearing» the mind from the traumatic memories they call «engrams.» The first step consists of telling Mierzwiak about Clem and their relationship in detail; the conversation is taped. The second step confronts Joel with the memorabilia he has been asked to bring to Lacuna. With his head in a scanner that resembles a 1960s professional hairdryer, Joel is shown the objects one by one; since refraining from verbalizing produces a better «emotional read out,» he is instructed to react to them only mentally (Fig. 1a). The process enables the «mapping» of each object-related memory in the brain. In images that resemble computerized tomographies, the brain is shown as a close-up of a computer screen; memory locations appear as green spots on the image (Fig. 1b).

With the finished map stored in a computer, the awkward Lacuna technicians Stan (Mark Ruffalo) and Patrick (Elijah Wood) join Joel for the night in his apartment. They connect his head to the computer thanks to another funny-looking helmet, and sedate him (Fig. 2a). Stan targets the memories, starting with the most recent

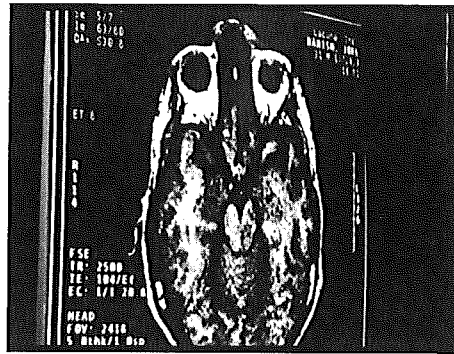
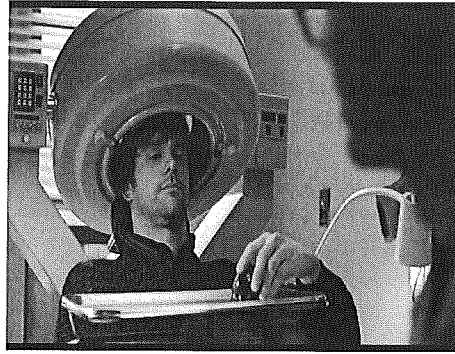


Figure 1 a–b: The mapping procedure.

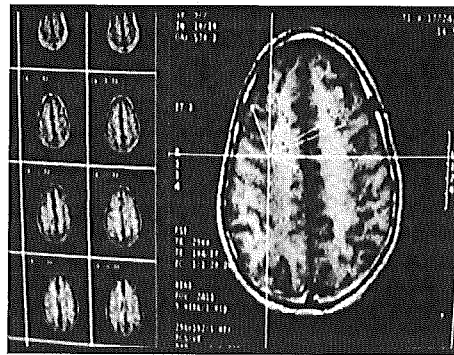
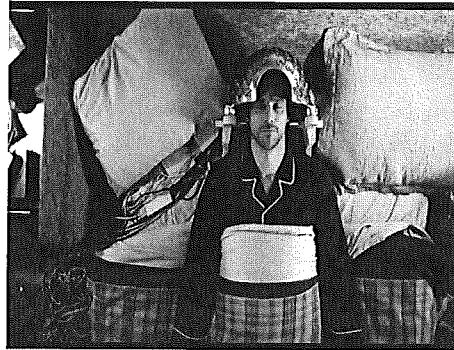


Figure 2 a–b: The erasure procedure.

ones, and destroys the corresponding brain tissue (Fig. 2b).

If all goes well, the subject wakes up having »emptied his life« of the ex-beloved. Past the most recent bad memories, however, Joel no longer wants to let go of Clementine. We then enter into his psychological world, and see him try to run away from the procedure. Joel even pleads, »Mierzwiak, please let me keep this memory. Just this one.« Or: »I wanna call it off. ... I don't want this anymore!« Of course, since these demands are unconscious wishes staged as mind-screen, nobody can hear them. Joel's revolt takes the form of visually striking scenes that combine episodes of the past, moments of classically cinematic action (good guys chased by bad ones) and, finally, Clem's disappearance or the memory's disintegration.⁴ For example: Joel and Clem break into an empty beach house, and as the recollection is targeted, the house collapses; or they are in a bookstore, and as the memory is erased, the names of the book sections fade, the books turn to empty pages, and the image blurs; or they sit in a car watching a movie, rush out of the car just as it vanishes, and run past a fence, trying to go faster than the disappearing planks. Always in Joel's mind, Clem asks him to find a place where there are no memories of her; they end up in his childhood. In an overstated scene, Joel, dressed in a child's pajamas, hides under a giant kitchen table. Clem, as a babysitter with mindress and white boots, tells him »it's working.« »Look,« she says in baby talk, »we're hidden.« In the end, however, the childhood house also crumbles. Before the last memory is erased, Clem tells Joel to meet her again at the place of their first encounter. The film actually begins with Joel's waking up after the erasure night, and compulsively going there.

Joel's attempts at escaping take place while Stan has put the computer on automatic pilot; in the meantime, he and Mierzwiak's cute assistant Mary Svevo (Kirsten Dunst) are getting drunk and stoned, dancing around

and having sex.⁵ Suddenly, however, when Joel and Clem hide in his childhood, Joel goes »off the map.« While Mierzwiak is trying to find him, Mary recites »inspirational« quotations. One gives the film its title:

How happy is the blameless vestal's lot!
The world forgetting, by the world forgot.
Eternal sunshine of the spotless mind!
Each prayer accepted, and each wish
resigned.

These are lines 207 to 210 of Alexander Pope's *Eloisa to Abelard*, written in 1716. Eloisa contrasts her own fate – a nun after having been separated from Abelard, now castrated and a monk – to that of the cloistered virgins who, lacking an earthly love to remember, don't suffer from »hopeless, lasting flames« (line 261).

Mierzwiak finds the quotation »lovely;« Mary replies, »I just thought it'd be appropriate, maybe.« She then kisses him, telling she has loved him »for a very long time,« and becoming immediately upset. As Mierzwiak consoles her, his wife Hollis arrives, and informs Mary she has »already had him.« Mierzwiak is then forced to explain that he and Mary »have a history,« but that it has been erased.

Indeed, Mary has totally forgotten her relationship with Howard and doesn't even know it was deleted from her mind. Yet, as Eloisa's »lasting flames« (albeit unconsciously), her love persists, and when it reawakens, she feels it has lasted a long time. Back at Lacuna, listening to the tape of her pre-erasure narrative fills her with sadness and indignation. She then returns to the patients the tapes of their own narratives, thus leading Joel and Clem, after their post-erasure reencounter, to face what each had said about the other – and yet to stay together.⁶

Are Selves Memories?

It has been remarked that in many popular science fiction films, »[m]emory of a »reak past remains a defining criterion of being

a »real person,« and »personality is mind, irrespective of the body that contains it and the contexts this body finds itself in.«⁷ In *Total Recall* (Paul Verhoeven, 1990), for example, construction worker Douglas Quaid (Arnold Schwarzenegger) has recurrent dreams about Mars, where, he believes, he has never been. At a holiday agency that implants artificial memories of visits to exotic places, Doug signs up for a vacation as a secret agent to the red planet. It turns out, however, that he has actually been a secret agent on Mars, and during the implantation process, another personality appears. For most of the movie it is difficult to tell which personality is being performed, and whether the events are reality or programmed memories. A video of some other self who looks like Doug announces »the big surprise: you are not you, you are me.« This »me« is Hauser, an agent for Mars dictator Coahaagen; they have used Doug to lead them to Kuato, head of the rebellion against Coahaagen, and after Kuato is killed, Hauser wants to regain his body. Doug manages to escape, presumably to begin a new life in a planet turned green, with the beloved of his dreams, and, therefore, of his forgotten life. The morale of the film is perhaps epitomized in Kuato's aphorism, »A man is defined by his actions, not his memories.« In the movie, however, memories secure the continuity of identity and are, as an evil character puts it, located in »that black hole you call brain.«

In another action film, *Johnny Mnemonic* (Robert Longo, 1995), bad guys try to recover the data contained in a »wet-wired« implant in Johnny's brain. The hero, alas, had »to dump a chunk of long-term memory« for his job as a »mnemonic courier,« and is now making a last dangerous trip to earn the money for an operation that will give him the lost memory back. When it becomes clear that there will be no operation, he is informed, »The only way left is to hack your own brain.« As the downloading ends, Johnny mindscreens

a childhood memory, and that opens the way for another romantic happy end. More recently, *Paycheck* (John Woo, 2003), inspired (like *Total Recall*) by the American science fiction writer Philip K. Dick, is about an engineer who has had three years erased from his memory, and about his quest to find out what happened. *The Final Cut* (Omar Naim, 2004) takes place in a world where an implanted microchip records every moment of a person's life as if filmed by a subjective camera; after the person's death, the recording can be edited as a »rememory.« The film's hero is the cutter Alan Hakman (Robin Williams), whose affectively miserable life has been determined by a traumatizing, but false, childhood memory, and who finds peace only after viewing the episode from his implant.

These and other films speculate on what could happen if we were deprived of memories or given false ones, or when we mistakenly believe memories to be accurate mirrors of past events. For them, a false memory is effective, but it is not legitimate, and necessarily makes the subject unhappy or incomplete; forgetting and reconstructing the past have no positive value. Only an indexical memory that directly records external material realities may form one's authentic self. The movies mentioned above adopt such realistic attitude at the expense of what Freud called »psychical reality.« *Eternal Sunshine* differs from them in that, instead of merely narrating what happens after the protagonist's memories have been erased or falsified, it focuses, mainly via mindscreen, on the deletion process and the resistance it generates. Like them, however, it assumes that memories are essential to self, and that memory makes you what you are. Memory erasure amputates the self. And while false memories don't make *you* false, they don't let you be truly *you*. In short, they raise Quaid's silly but profound riddle in *Total Recall*, »OK, if I'm not me, who the hell am I?«

In *Eternal Sunshine*, filling in memory lacunae may drive characters to mend the loss. By the same token, the erased information can be misused. Lacuna technician Patrick, a pathetic loser who desperately wants a girlfriend, attracts Clem with Joel's mementoes and narrative. In mindscreen, Joel complains, »He's stealing my identity. He stole my stuff. He's seducing my girlfriend with my words and my things.« Robbing somebody's identity requires nothing more than appropriating memories and acting in accordance with them. For all the materiality of the objects and actions that sustain such psychic robbery, Patrick doesn't need to have Joel's body as long as he can use Joel's memories.

The idea that memory defines personhood, or at least that it insures the continuity and integrity of personal identity, has long been discussed within modern philosophy. The idea that memory is constitutive of personal identity is of course much older. For Augustine (*Confessions*, Book X), just to begin with Christianity, it was crucial for our relationship to ourselves, the world and God. But only centuries later would it become the definitory element of personhood. In his *Essay Concerning Human Understanding* (1694, Book II, ch. 27), the English philosopher John Locke distinguished between *man*, a creature whose identity depends on »the same organized body,« and *person*, a »thinking being« aware of being himself in different times and places.

Thus, Locke claimed that if the soul of a prince, containing the consciousness of the prince's past life, is transferred into a cobbler's soulless body, then the being who resembles the cobbler would in fact be the prince. Similarly, if consciousness is located in the little finger, and the finger cut of the hand, then, Locke wrote, »it is evident the little finger would be the person, the same person; and self then would have nothing to do with the rest of the body.« Personal identity is separate from matter, and

requires only the continuity of memory and consciousness; therefore, »as far as this consciousness can be extended backwards to any past action or thought, so far reaches the identity of that person,« regardless of the substance to which it might be attached. Memory, however, turns out to be the truly defining factor.

Locke considered that a person »extends itself beyond present existence to what is past, only by consciousness.« It follows that the »absolute oblivion« of past events entails a loss of personal identity. Locke argued that if I am unable to retrieve the memory of some parts of my life, then I'm no longer the same person who carried out the forgotten actions, and that »the same man would at different times make different persons.« We may be unaware of something that happened to us in the past, but if we can remember it, then our self extends at least to that past moment; if, on the contrary, we have irretrievably forgotten those events, then, according to Locke, we are no longer the person who experienced them.

In Locke's radically novel theory, personal identity is purely psychological, and distinct from bodily identity. Philosophers since the 18th century have been responding to Locke, pointing out problems with the memory criterion, arguing that personal identity requires physical continuity, or defending other criteria, such as free will, interpersonal relations, or social and historical situatedness.⁸ Locke, however, has not ceased to frame discussions of the topic, and this applies to the movies mentioned above: they suggest that, in our culture, some version of the memory theory has become a default position about personhood – one that most spectators are presumed to recognize and accept. This presumption may be the reason for choosing it as a core narrative element. Nevertheless, beginning with the fact that they must use embodied characters, films display selves as being not only memories, but also bodies. The question is: which body makes up the self?

Are Selves Brains?

In *Eternal Sunshine*, the supposed irrelevance of the body is most apparent in Patrick's stealing of Joel's memories. Now, these memories can be removed only from a specific organ of the body: the brain. Yet »brain« doesn't even show up in the Internet Movie Database's list of plot keywords (www.imdb.com), which, among others, include »Extramarital Affair,« »Amnesia,« »Erased Memory,« »Boyfriend-Girlfriend Relationship,« »Betrayal,« »Crush,« »Déjà Vu,« »Infidelity,« »Loss Of Girlfriend,« »Poetry,« »Infatuation,« »Beach,« »Doctor,« »Memory,« »Black Comedy,« »Break Up,« »Title Spoken By Character,« »Adultery,« »Audio Cassette,« »Caught Masturbating [Joel as a »child],« »Dyed Hair [Clem's],« »Bare Butt,« »Marijuana,« »Sex,« »Subway,« and »Nonlinear Timeline.« Reviewers have paid no attention to the movie's brain elements beyond chuckling at the helmets Lacuna places on its clients, or amusedly quoting Mierzwiak's explanation that memory erasure amounts to »brain damage« but isn't worse than a night of heavy drinking. Brain-related moments and items seem to be no more than entertaining extras.

This is in a sense understandable. Although a few scenes of *Eternal Sunshine* include some of the customary visuals of science fiction, the film does not belong to this genre. The Lacuna procedure is perhaps futuristic, but the helmets are spoofy, the computer and imaging equipment low-tech, the company's facilities ridiculously shabby, and the erasing sequence largely comical. The paucity of special effects and the undercutting of technology through parody belong to the spirit of the movie. Charlie Kaufmann claimed, »The idea that there is a memory-erasing machine – I'm so uninterested in that, you know. I feel like such a Hollywood screenwriter 'cause that's in there.«⁹ That, however, is not merely a gimmick. »Hollywood« must have assumed that the technology would appeal to spectators,

that brain scans would be familiar to them, that they would readily accept the memory theory of personal identity, and that they would find it normal that brain tissue must be destroyed if memories are to be erased. In spite of its mindscreens focus, *Eternal Sunshine* partakes in a cerebralization of the psychological to which cinema has richly contributed.¹⁰

Eternal Sunshine juxtaposes the story of the two-year relationship between Joel and Clem, mainly mindscreens during the night in which the second story (the erasure and Joel's escape) takes place. The second story drives the film and provides the foundation for its structure and visual choices; and what happens in it is centered on the brain. Memories are localized in it on the basis of activity recorded by a scanner. Memory maps look like computerized tomographies. Erasure implies brain surgery. Stan realizes that Joel is »off the map« by looking at brain images. Joel may be driven by will and desire, but his hiding places are brain locations, and the escape scenes are figurative representations of non-visual cerebral processes. Joel locates himself in there: »I'm in my bed,« he says, »I know it. I'm in my brain.« In short, mindscreens is brainscreens. Joel's recapture makes that perfectly clear (Fig. 3):

After closing up on Joel's brain as displayed on Mierzwiak's laptop (a), the camera moves to Joel in bed (b). Cut to a mindscreens scene (c): Joel hides with Clem in a foam bath in the sink of his mother's kitchen. – Joel: »Such a feeling of security.« – Clem: »I've never seen you happier, baby Joel.« Back in Joel's room, Mierzwiak zooms on the image so that it shows in red the spot he is trying to locate (d). Upon erasure, the happy couple goes literally down the drain (e). The coordinates on Howard's laptop (small screen on the lower left) glide to a new target (f). – Howard: »OK, we're back in.« By juxtaposing a brain scan with Joel with a mindscreens scene and again with a brain scan, *Eternal Sunshine* makes a powerful statement about neurobiological cau-

sality, merging the subject passively lying in bed and his active unconscious with the brain being treated.

Joel's assertion »I'm in my brain« expresses his temporarily locked-in condition, but he is not his brain's prisoner as a Platonic soul captive in a body. His resistance to the procedure challenges the power of neurotechnology, and seems to question

the reducibility of personhood to brainhood. Yet nothing in the movie contradicts the ideology of the cerebral subject. Such conformist attitude is shared by most recent films dealing with life science technologies. In one of the most famous, *Gattaca* (Andrew Niccol, 1997), the main character has been naturally conceived, and that excludes him from a society that privileges genetically

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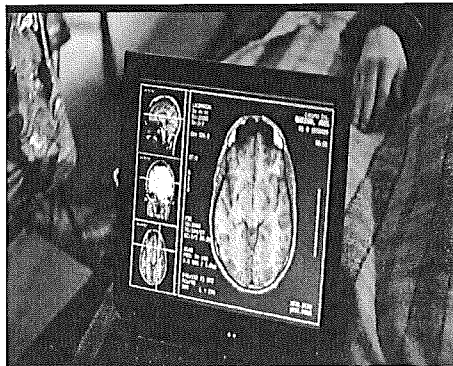
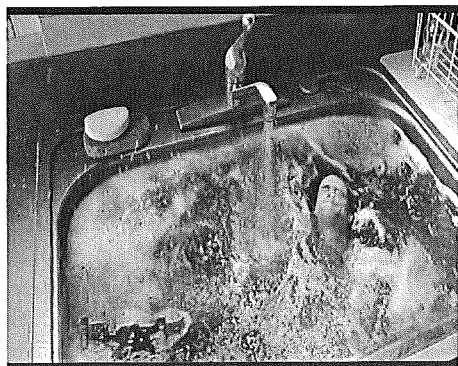
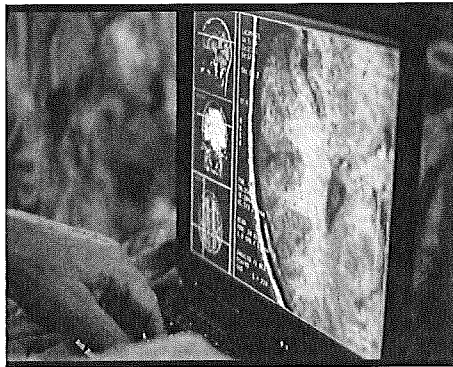
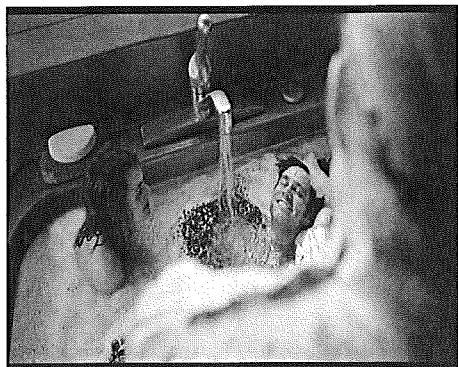
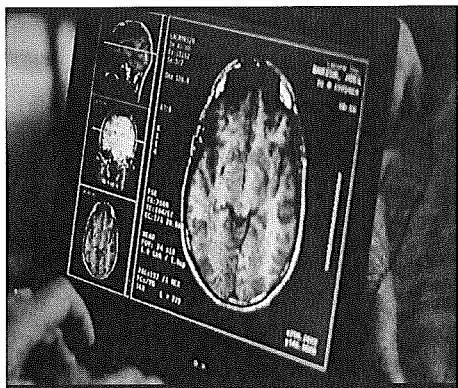


Figure 3 a–f: Getting Joel back.

engineered individuals. Instead of revolting, he doctors his body in the pursuit of goals that only those individuals may achieve. In *Eternal Sunshine*, Joel doesn't break with the system – though not because he doesn't want to, but because his escape is necessarily confined to his brain. His flight is a frantic race in a maze of neural networks, and only there can he try to renegotiate his contract with Lacuna.

The Ideology of the Cerebral Subject

Eternal Sunshine was produced in a culture where the cerebral subject embodies a spontaneous view across a wide spectrum of contexts, from popular culture to the university. Wouldn't a brain transplant actually be a full-body transplant? If A's brain could be transplanted into B's body, then A would gain a new body, rather than B a new brain. »This simple fact,« professed a leading neuroscientist, »makes it clear that you are your brain.«¹¹ For French philosopher Stéphane Ferret, »Person P is identical with person P* if and only if P and P* have one and the same functional brain.«¹² To have the same brain is to be the same person. The question is how such a belief became so apparently obvious.

We have seen that for Locke, personal identity consists in a continuity of conscious memory. To the extent that the brain was known to be *somehow* the seat of these psychological faculties, it naturally became the only organ essential to the self. This was asserted already in the 18th century. Charles Bonnet, a Swiss philosopher and naturalist, wrote for example that »If a Huron's soul could have inherited Montesquieu's brain, Montesquieu would still create.«¹³ The statement redefines the union of soul and body as a union of soul and brain, and reduces to the brain the portion of the body necessary for personal continuity. Such a conviction has sustained brain research; and yet, inverting history, scientists believe it is recent neuroscientific progress that proves

we are our brains. »It is no coincidence,« explained a professor of neurology, »that the last 10 years of the 20th century were designated [by U.S. president George W. Bush] the Decade of the Brain; the success of the scientific method partially replaced older notions of the soul or mind-body dualism with the doctrine that mind and, by extension, intellectual creativity, is the brain's exclusive output.«¹⁴ It is nevertheless obvious that a metaphysical position does not derive logically from »scientific progress.«

Brain anatomical and physiological research between the end of the 17th and the beginning of the 19th century was closely connected to investigations on the structure and function of the sense organs. The nerves linked the brain and the environment, but they were also seen as the intermediaries between the soul and the body. These functions explain their broad cultural significance during the Enlightenment, and the fact that the nervous system became the common ontological matrix of the sciences of the body and the sciences of the mind. In this context, one could give up the quest for the place where soul and body interact (the »seat of the soul,« which Descartes had located in the pineal gland) for different reasons. Materialism was only one of them, and the most obvious: it makes no sense to investigate something said not to exist. Methodological considerations played a more fruitful role. Thus, the anatomist and physiologist Albrecht von Haller, a friend of Charles Bonnet's and, like him, a convinced Christian, found anatomical research inconclusive. For him and others, the problem lay in the difficulty of making brain dissections and lesions. But that did not make him deny the existence of an immaterial and immortal soul.

In short, it was sometimes for metaphysical, sometimes for methodological reasons that brain research abandoned the concept of soul, and focused largely on the localization of function. The bond of brain to self and personhood was thereby confirmed

and refined. A well-known early 19th-century example is that of phrenology, with its assumption that each mental faculty has its own brain »organ,« proportional in size to the strength of the corresponding faculty, and determining the skull's shape. Its huge popularity illustrates the appeal of physiognomic approaches to penetrating the secrets of the self. In the case of phrenology, the skull's outward appearance furnished the key to character and aptitudes. In the 1930s, the curves of the electroencephalogram (EEG), which record the brain's electrical activity, seemed like a language that, when deciphered, would reveal the mind and the self. More recently, such visualization techniques as functional magnetic resonance imagery (fMRI) have revived hopes virtually identical to phrenology's.¹⁵

The 19th-century search for the correlation of brain sites and psychological phenomena resulted in ever increasingly detailed maps of the brain areas, especially of the cerebral cortex, associated with those phenomena. The discovery of the localization of language in the left hemisphere opened the way to the formulation of hemispheric dichotomies. Here we have another instance of the cultural impact of the neurosciences: the left hemisphere ended up being associated with masculinity and rationality, the right one with femininity and the emotions; research on hemispheric lateralization and dominance inspired a vast personal development literature, and even alarmed speculations about the future of a society ruled by left-hemisphere values.¹⁶ In the 19th century, the brains of geniuses, criminals and the mentally ill were collected, measured and described as if the extraordinary qualities of their owners were inscribed in cerebral morphology; racial and sexual differences were also attributed to differences in brain size, form and weight.

Brain determinism of this sort is being constantly updated. After Ulrike Meinhof committed suicide in prison in 1976, her brain was removed from her body. In the late 1990s, it was examined by a psy-

chiatrist who discovered lesions caused by a 1962 operation, and concluded, »The slide into terror can be explained by the brain illness.«¹⁷ After Albert Einstein's death in 1955, his brain was cut into 240 cube-shaped blocks from which microscopic slides were prepared. In the 1980s and 90s, several studies »explained« the physicist's genius on a neuroanatomical basis.¹⁸

The fascination brain anatomy may exert on the public by far doesn't match that of brain imaging. In the Decade of the Brain, brain visualization technologies, above all fMRI, have become the new magic wand whose touch is expected to open the secrets of the brain and explain human essence. Neuroimaging findings have been discussed in a myriad of cover stories in both scientific and popular magazines, and the brain, mainly as depicted by fMRI scans, has largely replaced the double helix as a major icon of modern humanity.

The availability of fMRI has also driven the emergence of such fields as neuroesthetics, neuroeconomics, neuropsychanalysis, neuroeducation or neurotheology. Since the 1990s, the number of fMRI studies on topics with potential ethical, legal, social and policy implications (attitudes, cooperation and competition, violence, or religious experience) has grown exponentially. For all their revolutionary and futuristic rhetoric, most of these studies merely offer »neural correlates« of uncertain significance for processes studied and described by esthetics, economics, psychoanalysis, education, or religious and social psychology.¹⁹ While the older field of neurophilosophy has mainly sided with brain reductionism, the new academic area of neuroethics deals with the moral, social and political challenges of the neurosciences. Yet, because most neuroethicists believe that the neurosciences are bringing about an anthropological revolution, neuroethics prospers on anxieties that »have become part of the very problem they seek to address;« much of it »implicitly makes the case for those who live on these expectations,

be they researchers in search of grants, corporations in search of investment or popular science writers who thrive on sensationalism to sell their products.«²⁰

Neuroimaging has also sustained commercial enterprises and interest groups. Neuromarketing, for example, aims at shaping advertising campaigns on the basis of what scans may reveal about potential customers' preferences and choice mechanisms; neurobics has grown into a considerable industry that sells exercises to develop »right brain awareness,« contact your creative self, or make your brain feel younger. Numerous websites, as well as books with such titles as *Build Your Brain Power*, *Brain Fitness* or *The Executive Brain*, delineate a neuroascetic world of cerebral self-discipline practices aimed at acting on the brain. This world has been spawning groups for mutual support, competition or training, and even »neuro-communities« (e.g. www.braingle.com).

Similarly, the possibility of visualizing differences in brain functioning has nourished the notion of »neurodiversity« (e.g. the different brain »wiring« that leads to a diagnosis of autism). Like neuroasceticism, neurodiversity is not just an idea; rather, it has become the keyword for people who identify with a certain neurological condition, and a value that »neurotypicals« are asked to respect. Neuroasceticism, neurodiversity, and in general the uses of neuroimaging for self-knowledge may commit people to a process of »objective self-fashioning« based on expert knowledge.²¹ Science generates facts (about, for example, how depression is linked to serotonin deficiency, or how my brain differs from others') considered to define objectively who we are, and individuals form their own models of selfhood on the basis of these facts.

In the 1960s, well before becoming tied to neuroimaging, the cerebral subject was given philosophical form by thinkers who revived Locke's approach of discussing personal identity with the help of thought experiments. These no longer concerned princes or

little fingers, but brains transplanted or kept alive in a vat, sometimes connected to computers or information-storage and transfer devices. In an early and relatively simple experiment, Sidney Shoemaker imagined that a brain could be entirely removed from a person's skull to be repaired, and then put back in place. After the brains of patients Brown and Robinson are mistakenly interchanged, one of the patients dies. Endowed with Robinson's body and Brown's brain, the survivor, »Brownson,« doesn't recognize his body, but is psychologically just like Brown. Shoemaker argued that Brownson's having Brown's brain *explains* his psychological affinity to Brown, but doesn't imply he *is* Brown.²² By speaking of this situation in terms of »bodily nonidentity,« as if the brain were not a part of the body, Shoemaker anticipated in academic philosophy the dichotomy body-brain that has become a major trope of media and popular treatments of the neurosciences.

Brain fictions multiplied into bisections and the subsequent question of whether two persons can share a single body, graftings of X's brain into Y's brainless body, or transplantations of each hemisphere into a new body.²³ Harvard philosopher Hilary Putnam's »brains in a vat« experiment is especially famous.²⁴ In a science-fiction variation of the Cartesian demon who fools you into believing that you have a body and that there is an external world, Putnam imagined that while you are sleeping, your brain is removed, kept in a vat, and hooked to a computer that sends the kinds of input it usually received. When you wake up, everything looks the same as before, only that you are just a brain in a vat (cf. the film *The Matrix*). Putnam argued that, in such a situation, you could not know you were a brain in a vat. Although his purpose was to discuss skepticism rather than personal identity, it is significant that the choice of a brain fiction seemed so natural, as if investigating self-knowledge necessarily implied equating personhood and brainhood.

By the 1960s, brains in vats were nothing new. In a 1929 futuristic phantasy, the polymathic Marxist pacifist, pioneer of X-ray crystallography and philosopher of science John Desmond Bernal imagined a benevolent utopia in which interconnected brains would be kept alive in cylindrical »brain-cases,« guaranteed »continuous awareness,« and linked to natural or artificial sensory and locomotor organs. The resulting »multiple individual« would be immortal, »the older components as they died being replaced by newer ones without losing the continuity of the self, the memories and feelings of the older member transferring themselves almost completely to the common stock before its death.« Such apparently monstrous »new man« would actually be »only the logical outcome of the type of humanity that exists at present.« »After all,« Bernal emphasized, »it is brain that counts, and to have a brain suffused by fresh and correctly prescribed blood is to be alive – to think.«²⁵ In the 1950s, brains in vats, the generally catastrophic sequels of brain transplantation, and personal immortality through successive transfers of a brain into younger bodies became commonplace in science-fiction novels and numerous B movies. We may have the impression that these texts and films cinematize philosophical thought-experiments; more likely, in this case philosophy has academicized popular fiction (Fig. 4).²⁶

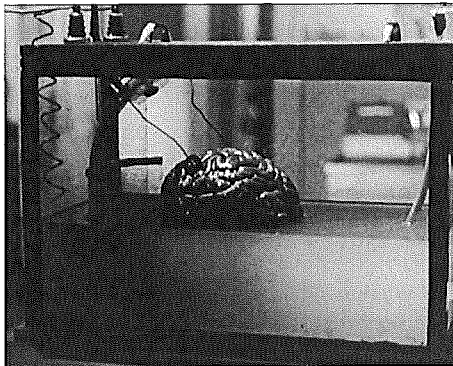


Figure 4: Philosopher's inspiration?
Donovan's brain kept alive in a vat.
From *Donovan's Brain* (1953).

Be that as it may, brain fictions in all their forms have contributed to the cerebral subject's *lettres de noblesse*, helped naturalize it in our culture, prepared the ground for the iconizing of brain scans, and, in short, illustrated how ingrained it has become to think of personhood in terms of brainhood. The brain is, paradoxically, everything; while neuroascetics treats it like a muscle and as the self's body par excellence, immortality fictions hold that brains never age, thus giving it traditional qualities of the soul, the immaterial substance par excellence. For the late Oxford philosopher Kathleen Wilkes, the theoretical impossibility of thought-experiments rendered them irrelevant.²⁷ But the bottom line of criticism, hers and others', consists of making the difference between being a brain, and not being able to be without one.

It is partly the same with *Eternal Sunshine of the Spotless Mind*, and that is what makes it an especially subtle production in the context of films concerned with memory, brain, and identity. On the one hand, to the extent that it adheres to a memory theory of personal identity and foregrounds the cerebral localization of memories, it admits that humans are essentially their brains. As we saw above, in *Eternal Sunshine*, mindscreen is brainscreen, and happiness can be pursued by acting directly on neural tissue. On the other hand, the film variously nuances its own brainhood assumptions. Some details are no more than passing, and probably unintentional hints. Thus, although the procedure suggests a narrow localizationism according to which memories are situated in discrete areas of the brain, each memory seems to involve the simultaneous activation of several regions (see Fig. 2b). More important, the mapping of memories requires self-narrative, concrete objects, and an emotional response, thus subordinating technology to lived experience. Besides (and this is a filmic cliché), in the presence of the forgotten beloved, the person's reactions show that love survives amnesia.²⁸ Finally,

there are considerable stylistic differences in the way *Eternal Sunshine* treats the erasure procedure and Joel's brain/mind reality. Neurotechnology, including the scanners, computers and helmets, as well as the Lacuna office and technicians, are depicted in a satirical mode; the traditional mad evil scientist has metamorphosed into the gentle Dr. Mierzwiak. The most inventive, if often melodramatic, use of filmic resources is reserved for mindscreening Joel's running away from neurotechnology.

Both styles are nevertheless employed to concentrate on the same object: Joel's brain. *Eternal Sunshine* is thereby symptomatic of the tensions and alliances between the psychological, memory-based notion of personal identity, traditional localizationist convictions in new garb, and more recent modes of »biosociality« in which a physicalistic vocabulary (about biological invariants, cholesterol rates, muscular tonus, physical performance, aerobic capacity, brain activation, and much else) defines quasi-moral norms, and provides criteria for individual evaluation and self-fashioning.²⁹ Psychological and internalistic notions of personhood are displaced by the relations between body and self that sociologists Carlos Novas and Nikolas Rose have called »somatic individuality.« Developments in neurochemistry and brain scanning »appear to establish direct and »superficial« empirical and observable relations between the physiological and the ethical: between the brain and all that makes a human person.«³⁰ As mindscreen contracts to brainscreen, the somatic shrinks to the cerebral. At the same time, precisely because cerebral subjects are defined by brainhood, they can't escape the body that nourished their memories, and keep Freudianly falling for the love objects they lost.³¹

Footnotes

- 1 Bruce F. Kawin defines mindscreen as a »visual (and at times aural) field that presents itself as the product of a mind.« *Mindscreen. Bergman, Godard, and First-Person Film* (Princeton, Princeton University Press, 1978), p. xi.
- 2 F. Vidal, »Le sujet cérébral: une esquisse historique et conceptuelle,« *Psychiatrie, sciences humaines, neurosciences*, 3, n° 11, 2005, 37–48; »Brainhood, Anthropological Figure of Modernity,« to be published in *History of the Human Sciences*.
- 3 »Lacuna,« from the Latin for hole or pit, designates a blank or missing portion in a text, and, generally, an empty space. See www.lacunainc.com for the company's mock website.
- 4 One could show how these scenes visually embody features that Freud, in *Das Unbewusste* (The Unconscious, 1915, § V), attributed to unconscious processes.
- 5 Mary's family name may be significant. Italo Svevo's 1923 novel *La coscienza di Zeno* (*Zeno's Conscience*) consists of the life-report a man has written for his psychoanalyst, who had hoped it would be a »good prelude« to the treatment.
- 6 For Christopher Grau, *Eternal Sunshine* shows »that the harm caused by voluntary memory removal cannot be satisfactorily understood solely in terms of harms that are consciously experienced« (p. 129). In returning the patients' tapes, Mary causes suffering; but by restoring people's identities to a fuller state, she may be causing a worthwhile pain. C. Grau, »*Eternal Sunshine of the Spotless Mind* and the Morality of Memory,« *The Journal of Aesthetics and Art Criticism*, 64, 2006, 119–133.
- 7 Sky Marsen, »Against Heritage: Invented Identities in Science Fiction Film,« *Semiotica*, 152, 2004, 141–157, p. 144. See also Wendy Doniger, *The Woman Who Pretended to Be Who She Was. Myths of Self-Imitation* (Oxford, Oxford University Press, 2005), ch. 8, »Mind Lifts.«
- 8 For excerpts of essential texts, see John Perry, ed., *Personal Identity* (Berkeley, University of California Press, 1975).
- 9 Rob Feld, »Q & A with Charlie Kaufman.« In C. Kaufman, *Eternal Sunshine of the Spot-*

- less *Mind* (London, Nick Hern Books, 2004), p. 139.
- 10 Remakes of classic scripts furnish good examples. Since the 1940s, brain transplantation has replaced the creation of life as central theme of *Frankenstein* movies. *The Manchurian Candidate* tells the story of soldiers brainwashed to have false memories of their commander's behavior. In the 1962 version, directed by John Frankenheimer, the protagonists were manipulated by purely psychological means – a mixture of hypnosis and behavioristic conditioning; in Jonathan Demme's 2004 remake, these means are enhanced by implanting a microchip in the brain.
 - 11 Michael S. Gazzaniga, *The Ethical Brain* (New York, Dana Press, 2005), p. 31.
 - 12 Stéphane Ferret, *Le philosophe et son scalpel. Le problème de l'identité personnelle* (Paris, Minuit, 1993), p. 79.
 - 13 C. Bonnet, *Essai analytique sur les facultés de l'âme* (1760), § 771. The native North-American Huron was the paradigmatic Enlightenment savage. See F. Vidal, *Les Sciences de l'âme, XVI^e–XVIII^e siècle* (Paris, Champion, 2006), ch. 9.
 - 14 Frederick E. Lepore, »Dissecting Genius. Einstein's Brain and the Search for the Neural Basis of Intellect,« *Cerebrum*, 3(1), 2001, unpaginated in the version available through www.dana.org.
 - 15 William R. Uttal, *The New Phrenology. The Limits of Localizing Cognitive Processes in the Brain* (Cambridge, Mass., MIT Press, 2001).
 - 16 Anne Harrington and Godehard Oepen, »Whole Brain' Politics and Brain Laterality Research,« *European Archives of Psychiatry and Neurological Science*, 239 (3), 1989, 141–143.
 - 17 »Meinhof Brain Study Yields Clues,« *BBC News*, 12 November 2002. <http://news.bbc.co.uk/1/hi/world/europe/2455647.stm>.
 - 18 Michael Hagner, *Geniale Gehirne. Zur Geschichte der Elitenhirnforschung* (Göttingen, Wallstein, 2004).
 - 19 For an example of this rhetoric in the neurosciences themselves, see »Das Manifest« by eleven major neuroscientists, *Gehirn & Geist*, 6, 2004, 30–37.
 - 20 Ilina Sing and Nikolas Rose, »Neuro-forum: An Introduction,« *BioSocieties*, 1, 2006, 97–102, p. 100.
 - 21 Joseph Dumit, *Picturing Personhood. Brain Scans and Biomedical Identity* (Princeton, Princeton University Press, 2004).
 - 22 Sidney Shoemaker, *Self-Knowledge and Self-Identity* (Ithaca, Cornell University Press, 1963).
 - 23 See for example Derek Parfit, »Personal Identity,« *The Philosophical Review*, 80, 1971, 3–27; Roland Puccetti, »Brain Transplantation and Personal Identity,« *Analysis*, 29, 1969, 65–77. »Brain Bisection and Personal Identity,« *British Journal for the Philosophy of Science*, 24, 1973, 339–355.
 - 24 Hilary Putnam, *Reason, Truth, and History* (New York, Cambridge University Press, 1981), ch. 1.
 - 25 John Desmond Bernal, *The World, the Flesh, and the Devil: An Enquiry into the Future of the Three Enemies of the Rational Soul* (1929), ch. 3, »The Flesh.« The unpaginated full text is available at several websites. See Cathy Gere, ed., »The Brain in A Vat,« special issue of *Studies in History and Philosophy of Biology and the Biomedical Sciences*, 35, 2004.
 - 26 Figure 4 is taken from just one of many possible examples, the film *Donovan's Brain* (1953, directed by Felix Feist), based on Curt Siodmak's homonymous novel of 1942 about what happens when the brain of evil millionaire Warren H. Donovan is kept alive after Donovan »dies« in a plane crash.
 - 27 Kathleen Wilkes, *Real People. Personal Identity Without Thought Experiments* (Oxford, Clarendon Press, 1988).
 - 28 On this motif, see Doniger, *The Woman*, ch. 8. The cliché turns out to fit with current neuroscience. Popular science writer Steven Johnson maintains that *Eternal Sunshine's* model of memory is consistent with studies on emotional memories and with the reconsolidation theory (experimental work with animals, mainly on fearful memories, shows that, after recall, a memory must be synaptically »reconsolidated,« or it will be forgotten). S. Johnson, »The Science of *Eternal Sunshine*. You can't erase your boyfriend from your brain, but the movie gets the rest of it right,« www.slate.com/id/2097502/, posted 22 March 2004.
 - 29 I use freely the term coined by Paul Rabinow in connection with the socio-cultural and political consequences of genetics and the Human Genome Project; see for example

his »Artificiality and Enlightenment: From Sociobiology to Biosociality,« in *Essays on the Anthropology of Reason* (Princeton, Princeton University Press, 1996).

- 30 Carlos Novas and Nikolas Rose, »Genetic Risk and the Birth of the Somatic Individual,« *Economy and Society*, 29, 2000, 485–513, p. 508. In her perceptive »Memory Matters in the Digital Age« (*Configurations*, 12, 2004, 349–373), José van Dijck explains how *Eternal Sunshine* displays contemporary ideas (about the encoding of memories as networks, or about the role of object-related sociocultural practices for memory formation), and notes its ambiguous attitude

towards the localization of memory (inside the brain, and at the same time in material things connected to lived experiences). It is, however, part of that attitude that *Eternal Sunshine* doesn't renounce the ideology of the cerebral subject.

- 31 Thanks to David Kirby, Sophia Wackimes and Ulrike Weckel for their helpful comments. Some of the points discussed here were presented after a screening of *Eternal Sunshine* during the »Semaine du Cerveau« organized by the Dana Foundation (Lausanne, March 2007); I thank Jacques Gasser and Pierre Magistretti for their friendly participation in the ensuing debate.