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A New Lease on Life: A Lacanian Analysis of Cognitive Enhancement Cinema

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Introduction

Let me begin with two instances of ‘brain art’, an early modern ‘original’ and its cinematic parody. In 1656, Rembrandt van Rijn painted one of his famous ‘anatomical lessons’: a cinematic scene (an early modern ‘movie still’), featuring Dr Deyman, who has lifted the skull of a convicted criminal, exposing his brains. The convict, executed by hanging, seems lost in meditation, until we realize that his abdomen has been emptied. Rembrandt’s corpse is modelled on Andrea Mantegna’s *Lamentation over the Dead Christ* (c.1490), so that Jesus and the thief changed places. The painting is actually a fragment: a substantial part was destroyed by fire. We see Deyman’s dexterous hands, about to perform the autopsy, as if the camera is zooming in. A mysterious, forbidden, ‘partial’ object, the human brain, is suddenly revealed, holding us captive: the inner core of what we are, detachable from the body. This is what the painting brings to light. The convict’s intestines have already been removed and the brain is the next body part to go. This artwork reveals (brings to the fore) the basic (Frankensteinian) truth of modern anatomy, namely that the human body is an aggregate of detachable ‘partial’ organs, of removable body parts (Zwart 2014b). In Heideggerian terms (1957): although the artwork at first glance may seem a ‘representation’ (recording an early modern scientific accomplishment, modelled on a late 15th-century religious ‘original’), it is highly original in itself, a moment of ἀλήθεια, opening up an intellectual ‘space’, virtually untrodden at the time, a particular way of viewing and approaching the human body, allowing it to appear in a certain manner (namely as an aggregate of detachable items), so that anatomy as a research field becomes possible. This may explain the numinous aura, the ambiance of mystery and awe, commemorating the advent of a new experience of embodiment. The brain’s inner obscurity is suddenly brought into view, its intriguing *Gestalt* ready to be processed into insight and knowledge (Zwart 1998).

The present-day counterpart is a scene from the movie *Hannibal* (2001), starring Anthony Hopkins as Hannibal Lecter. It is dinner time. The camera zooms in on Hannibal’s hands, lifting the skull of justice department official Krendler, skilfully using his scalpel (as a neuroanatomy virtuoso), cutting off slices of his victim’s

prefrontal cortex, sautéing it and serving it for dinner, meanwhile lecturing agent Clarice Starling (his favourite audience). The movie scene is an anatomical 'lesson', a live autopsy in its own right. Again, we notice the role reversal, with the justice official now acting as 'convicted criminal' and the criminal as surgeon. The underlying scheme still functions, but roles may shift as 'variables'. The cinematic parody conveys a similar truth: the body is opened up as an aggregate of detachable parts, a *'corps morcelée'*, an assembly of organic fragments, although, in the movie version, this truth applies to the *living* body, rather than to a corpse. The detachable body part that is revealed and desecrated is a most uncanny partial object: the movie's 'object a', in Lacanian grammar, namely the neocortical brain.

The brain has become the object of choice of our scientific *scopophilia*, our *observandi cupido*, our desire to see and penetrate. Brain anatomy gave way to *vivisection*. Lecter performs an *experiment*, interacting with Krendler as his research subject, monitoring the living, functioning brain. Scientific voyeurism gave rise to high-tech tools like magnetic resonance imaging (MRI), allowing us to shed glances into ourselves. The brain has become our most fascinating organ, allegedly the key to human self-understanding, the ultimate organic-biochemical machine that conjures up the world as we experience it – our inborn cinema as it were.

In *Hannibal*, 'cutting-edge' brain surgery is employed as a vehicle of destruction: a horrifying form of (apparently painless) punishment and torture. According to Claude Bernard (1865/1966), 'founding father' of modern medicine and 'champion' of vivisection, scientific research involves 'experimentation by destruction': a step-wise dismantling of the (living) organism. By removing 'partial objects' organ by organ, lobe by lobe, their function can be revealed. Decerebration (neocortical extirpation) was among the techniques vivisectionists employed, but a human being now acts as stand-in for laboratory animals. Lecter works like a sculptor, *'per via di levare'*, removing lobes and slices to reveal the 'thing' inside, until emptiness remains. Step by step, pieces from Krendler's neocortex come off, while Hannibal (carefully handling his 'chisel') continues to converse with him: a research subject in a (cannibalistic) brain experiment.

As Freud (1919/1947) points out, detachable body parts (hands, feet, but especially eyes), separated from the body, strike us as *uncanny* par excellence. Such partial objects are the basic ingredients of horror films, and *Hannibal* plays on the uneasiness produced by the idea that brain parts can effectively be disconnected from the living body by neuroscience. Skulls can be lifted, lobes removed. In university hospitals, neocortices of living humans are treated in this manner.

A liaison has developed between cinema and the brain: the 'partial object of choice' of contemporary enhancement movies. Whereas Hannibal Lecter performs a debilitating 'experiment by destruction' (in truly Bernardian style), contemporary brain movies usually focus on cortical *enhancement*. Instead of disruptive dismantling of the brain, something is added to it, *per via di porre*, boosting cognitive performance. In *Johnny Mnemonic* (1995), the brain as a cinematic object is pervaded by implants to enlarge memory storage capacity, while in Michael Gondry's *Eternal Sunshine of the Spotless Mind* (2004), an estranged couple decides

to have their (traumatic) memories of each other erased, so as to relieve themselves of neocortical dead weight.

All this is connected with our self-image, the way we see ourselves. Traditional metaphysics argues that we *'have'* something which other animals *lack*: be it a rational soul, self-consciousness, morality or an ingenious cortex. Yet, there is a countervailing view which rather defines humanity in terms of vulnerability, deficiency and lack; we *lack* something which other animals *have*, a kind of basic 'fit' between body and environment. According to this view, human beings are *'Mängelwesen'* (Gehlen 1940/1962), with science and technology (including brain research) as desperate 'compensations'. Prostheses of various kinds enable us to survive. So far, they have assumed the form of external appendices (tools, clothes, glasses etc.). Nowadays, they are entering our own bodies and brains, becoming what Lacan (2006) refers to as 'extimate' objects: both intimate and foreign, both embedded and intrusive. As Michel Houellebecq (1998) has argued, in a novel that became a movie (*The Elementary Particles*, 2006), whereas other recent attempts to drastically improve the human condition (political, sexual and psychedelic revolutions of the 1960s as 'mass experiments') miserably failed, the hyperscientific revolution (currently raging) may do the job. This is what the Hannibal scene brings to the surface. The brain has been opened up. Certain parts or units (or their technological substitutes) can easily be removed, substituted, modulated or manipulated.

There is a 'timeliness' to this. The contemporary global world seems too complex for 'natural' brains to cope with. Confronted with overwhelming torrents of information pervading our globalizing environments at an astonishing pace, our mental capacities inevitably fall short. We are bypassed and overrun, *by technology as such*. We live in a world where 'cognitive capitalism' reigns, so that individuals will increasingly be forced to boost their brains (by lifelong learning, but also by drugs and implants).

This applies to everybody, but notably to a particular subset of human beings, namely white, mid-life (climacteric) males. In relentlessly evolving techno-social environments of bewildering complexity they are outcompeted: by younger generations (preferably of Asiatic descent, easily adapting to the caprices of hyper-modern information and communications technology (ICT)), but also by women (outperforming them in communicative and managerial competence, as virtuosi of the so-called 'softer' skills) and, last but not least, by robots and bionic cyborgs of various kinds. In contrast to 'phallic' tools of bygone days (plough, sword, hammer etc.), new ICT-based technologies are reminiscent of 'weaving webs' or shrouds (Berners-Lee 2000), so that contemporary technology-dense societies offer new opportunities for Penelope (seated in front of her screen) and new obstacles for Odysseus. This may well explain why contemporary brain movies so conspicuously entail a gender dimension. The cognitively upgraded human is, almost always, a challenged, middle-aged male.

Roughly, movies about cognitive enhancement fall into two categories. Some focus on neural *implants*, others on *neuropharmaceuticals*. Quite often, however, the 'extimate' implanted gadget produces biochemicals, altering the biochemistry

of neural performance. And these can also be administered orally or intravenously. In this chapter, rather than presenting snapshots of present-day brain cinema, I will focus on one particular case study, namely the film *Limitless* (2011), about a nootropic miracle drug named NZT-48. Movies about wonder pills build on a long tradition of formulaic stories: the quest for the Elixir, the archetypal miraculous potion that enhances longevity, happiness, sexual attractiveness and intellectual competitiveness (usually all of these together). In the current era, this Elixir found a novel point of access: the synapses and dendrites inside the human cortex, laid bare by neurotechnoscience.

For heroes in contemporary brain movies, wonder pills enhance faltering cognitive competitiveness, in an era when *brain power* has become a substitute for brawn, as the indicator of (phallic) vigour. The focus of attention has shifted from exploiting muscularity to exploiting brains. The male hero experiences his brain power as utterly insufficient. There is a general sense of incompetence and failure. Something is apparently missing (in Lacanian grammar: $-\varphi$). In terms of cognitive performance, the ego is hopelessly outclassed by other members of the cast, notably women. Something is blocking him. The wonder pill works miracles. Suddenly, it is *his* turn to outclass and intimidate these frightening (now: frightened) Others – temporarily, of course.

What is so fascinating about this subgenre of movies involving cognitive enhancers, sometimes referred to as ‘Viagra for the brain’? What does it tell us about contemporary society, cognitive capitalism, technology discontent and shifting gender roles? To address this, *Limitless* seems a perfect case. The movie, released in 2011, is based on the novel *The Dark Fields* by Alan Glynn (2001), republished as *Limitless* in 2011. This ‘symptomatic’ movie allows us to study scientific and cultural trends involved in cognitive enhancement in sufficient detail. I will analyse *Limitless* from a psychoanalytic, more precisely Lacanian perspective, but in a way that is accessible for non-adepts.

Lacanian cinema

Point of departure is the Freudian idea that, similar to stories or novels, movies are basically structured like daydreams (Freud 1907/1941). The question movies set out to address is: What would happen *if*? A (secret) desire is acted out, by way of a cinematic experiment, exposing human beings (with whom audiences may identify) to out-of-the-ordinary circumstances. But, in contrast to novels or stories, a movie is a filmic text, a *Bilderschrift* (Freud 1900/1942, 284): a pictographic, figurative script; a digitalized celluloid dream. Rather than a *representation* of reality, it is a pictorial staging of anxieties, fantasies and wishes, inhibitions and concerns. ‘Celluloid heroes’ may play different roles as the story evolves, and their existence as imaginary persons cannot be disconnected from the dynamics and possibilities of the cinematic screen.

From a Lacanian viewpoint, movies are permeated by *scopophilia* or voyeurism: a relentless desire to see. Cinema is the theatre of the gaze (Metz 1997), staging multiple ‘gazes’, exposed to one another, so that a dynamical interplay evolves in

which movie characters *see* and *are seen*. Movies are like Sartre's famous keyhole scene (1943). A person secretly peers through a keyhole, trying to see something (a naked body perhaps, or parts of it, or two naked bodies, who think they cannot be seen and act accordingly). Suddenly, the sound of footsteps is heard. The bodies inside the room disappear from view and now the voyeur is *seen*, caught in the act: the target of a revealing gaze. The world flows over into the field of vision of this other: a cinematic scene par excellence, depicting craving humans, on the lookout for something, fuelled by a desire to see, but actually, they often fail to see it. And if they seem about to see, they are caught in the act of trying, so that instead of seeing they are *being* seen. Thus, besides the gaze of the audience, enabled by the camera (which opens up secret, impenetrable spaces, while we ourselves remain unseen), the movie's characters gaze at each other, as well as at enigmatic 'things' (body parts or other intriguing items).

The cinematic gaze is fuelled by the desire to discern an enigmatic, impossible object: the object *a* (either the 'real' thing or its various substitutes). A cinematic hero is a craving, divided subject, a *Mängelwesen* who lacks something (in Lacanian notation: $\$$) and is frantically in search of the cause of this discontent, this lack. Cinematic subjects (mirror images of ourselves) are searching for this object *a*, the enigmatic entity that supposedly will gratify the longings, remove the sense of lack. Due to the object's *absence*, however, cinematic subjects suffer from an unbearable condition of impotence and malaise ($-\varphi$). It may be a particular gadget they are after, or a particular 'partial' (detachable) item or organ, connected to another person's body. Voyeuristic subjects are desperately searching for an unknown (inexorable) object of desire which, all of a sudden, may present itself, appearing glaringly in front of them, about to be purloined, or otherwise disappear into the possession of the Other. The sudden proximity of the key object of our scopophilic gaze causes inhibition to give way to euphoria (*jouissance*). Suddenly, the subject *has* it. For a brief moment in time, dreary reality gives way to hyper-reality, aimless erring to goal-directed behaviour, until suspicion is aroused. Is it really the real thing? It remains an issue of concern. Can it perhaps be harmful? Or have we been duped once again?

In Rembrandt's painting, the neocortex (object *a*) is suddenly exposed by dexterous hands, holding an 'ὄργανον': a scalpel (φ), an appendix-like extension. Being in possession of this tool, and able to use it, Deyman 'has' it. But as soon as the object *a* is revealed, it is about to disappear again (through surgical removal). The convict is the craving subject ($\$$) whose brain is analysed. Modern science purports to explain the causes of his 'aberrant' behaviour. Rembrandt (who remains unseen, although we may recognize his 'hand') plays the role of 'analyst', making us aware of what causes our fascination: the alluring presence of the convict's brain (the painting's object *a*).

In *Hannibal*, these roles are distorted and subverted. We see the convict (a dangerous psychopath: $\$$) holding the scalpel (φ), lecturing. Like agent Starling, we are unwillingly impressed by his dexterity. Lecter seems in possession of something which other people lack, in various fields of expertise, including art history. As art historian, he must be performing his Rembrandt-parody

quite consciously. He confronts Starling, the camera and us with the uncanny, neuroanatomical object *a*: the living, functioning neocortex. Still, he remains a psychopath, destroying everything that stands between him and his object of desire, anything which constrains his freedom of manoeuvre to reach for it.

Limitless is a story about a (male, climactic) hero ($\$$), suffering from inhibitions ($-\varphi$), discovering an entity (*a*) that allows him to overcome his lack by dramatically transforming the biochemistry of his brain. What does this blockbuster movie (so successful that a sequel and a television series are in the making) tell us about contemporary society and the hype concerning brain research? Before analysing this formulaic movie, I will outline the script on which it builds: the quest for the wonder drug that allegedly allows us to boost our performance (intellectual and otherwise).

The miracle drug

In recent history, various miracle drugs have been recommended, such as LSD, propagated in the 1960s by Timothy Leary, who coined the slogan 'Turn on, tune in, drop out'. Another example of a wonder-drug propagandist is science author Paul de Kruif (1945), who, at a time when endocrinology was experiencing a period of rapid growth, published a partisan account about his own drug of choice, testosterone ('the male hormone'). According to de Kruif, testosterone not only increases muscle power and virility (notably for 'men on the wane', as he phrases it), but also mental keenness and 'brain power' (1945, 181). Manliness may suddenly expire ($-\varphi$). The downside of the 'gift' of manhood is its unreliability and questionability. Thus, although manliness initially seems to involve the possession of something which other people lack (φ), it actually is a source of anxiety and frustration. The author (notwithstanding his outspoken male chauvinism) speaks about males as people who are unable to live up to their expectations, suffer from insufficiency and lack, and are desperately in search of something that will restore to them what they apparently have lost, a pharmaceutical drug (the 'oral' version of the object *a*).

Testosterone, de Kruif argues, satisfies the 'hormone hunger' of faltering men, offering them a 'new lease on life' (the author's pet phrase, used more than a dozen times throughout the book). It will 'uplift the mental outlook' of 'chemically starved' males (87), 'foiled by mental tiredness' (104), making them self-assured again (97) and 'strong to think and act' (89), producing a 'startling upsurge' or 'soaring' of their physical and mental condition (101), changing the 'tonality' of their existence. Testosterone allows them to 'think more sharply' (163); their mental processes become more clear (126), their intelligence more lively (160). Testosterone is 'biochemical T.N.T.', unleashing an upsurge of brain power and 'mental verve' (193) by 'clearing the brain' (198). At last the subject can think straight again, and this gives rise to 'a condition medically known as euphoria' (145, 174). But the effects will only be temporary. Testosterone is a most questionable 'wonder drug'.

De Kruif presents his own life as a testosterone experiment, describing, for instance, the first time a tablet is offered to him by a friend:

I'll never forget the day he gave me those first tablets, little ten milligram pills not much bigger than an aspirin, for my own use (...). 'Okay, I'll try them,' I said. (143)

Soon, he experiences the 'new lease on life' caused by these pills so negligible in size: 'chemical crutches' (230) offering a welcome substitute for what is insufficiently produced 'in those private laboratories, the testicles' (51).

In short, for de Kruif, these tiny tablets represent the (oral) object *a*. Manhood is basically chemistry, dependent on chemicals provided either by nature or by pharmaceutical companies (to counteract the 'chemical castration' known as ageing). De Kruif promotes a frantic search for deliverance. Testosterone will make him whole again, although, towards the end of the book, ambivalence returns. Has he been duped once more? Yet the hint remains that testosterone may bring about, in climacteric males, 'a transfiguration into *the youthful splendour of a movie hero*' (206, my emphasis). Let me now turn to the film, where a tiny pill indeed seems to have the envisioned effect.

Limitless

Limitless is the story of a middle-aged writer named Eddie Morra (Bradley Cooper) who, having finally secured a book contract with a New York publisher, falls victim to writer's block. Now that access to the world of professional authorship (legitimate daydreaming on paper) finally seems within reach, a paralysing impotence befalls him. All of a sudden, he is deprived of his ability to write ($-\varphi$): a case of 'self-sabotage', as Eddie phrases it. Things go from bad to worse. Girlfriend Lindy announces her decision to break up their relationship, ceremoniously handing him back his keys. He is unable to fulfil her desires and live up to her idea of a relationship.

On a Manhattan sidewalk, he bumps into an old acquaintance, a former drug dealer who invites him for a drink and to whom he confesses his 'creative problems'. The dealer offers him an (allegedly FDA-approved) wonder drug named NZT, a very small pill, an entity on the verge of materiality, almost inexistent: minuscule, colourless, transparent, weightless, with neither taste nor smell, wrapped in a plastic foil. At first, Eddie is sceptical. What is it: Viagra for the brain? But as he puts it in his pocket, the wonder drug seems to summon him: TAKE ME! Before long, he swallows the tablet. Within minutes, he experiences an upsurge in mental and physical prowess. His way-of-being-in-the-world brightens. He is granted a new lease on life, finishes his book in no time, and becomes a completely transfigured person: self-confident and highly efficient. Soon, he quits novel-writing for a stellar career on the Manhattan stock market, becoming the adviser and partner of one of the most powerful males in Manhattan, venture capitalist Carl Van Loon (Robert De Niro; in Lacanian grammar, the Big Other: Φ), whom he tries to please at first, but who is bound to become his 'Oedipal' competitor soon.¹ Eddie

facilitates the merger of two very large Manhattan firms, a process of staggering complexity, beyond the grasp of ordinary individuals.

During their first meeting, Van Loon asks him a very straight question: 'What's your secret?' And Eddie gives him a straight answer: 'Medication, I'm on special medication'. His life quickly moves ahead, or rather, upward. The camera drifts from his shabby apartment into luxurious meeting rooms, trendy restaurants and a stylish penthouse on the top floor of a Manhattan skyscraper: a 'fortress with a hell of a view'. From there, he looks down on the anonymous masses, dragging themselves through the streets like rivers of human flesh.

But all this comes with a price. To begin with, his resource of NZT will be exhausted sooner or later. Moreover, a violent crook (demanding a piece of the cake) threatens to 'flay' him with very sharp, scalpel-like knives. But his biggest concern is what de Kruif calls 'chemical castration': the sudden disappearance of the oral object *a*, the one thing which allows him (temporarily) to live up to his ego ideal – a most devastating event. A sword of Damocles is suspended over his head.

NZT is an intriguing entity. Everyone is after it, but it is always hiding somewhere and very difficult to find. It is almost inexistent; a miniature droplet of transparent milk, produced by a mysterious company (the movie's all-powerful Mother), a cinematic version of the object *a*. Its impact is immediate and highly dramatic: 'I was blind, but now I see' – a transformative experience. Eddie's ability to process information becomes intimidating. He becomes a 'sparkling cocktail of information', a Manhattan celebrity. Everyone starts watching him. Magazines write about him. He certainly 'has' it: a remarkable dexterity (φ), a special talent which other people lack. Via neural axons, NZT affect his whole body, allowing the world as such to appear in a remarkably translucent, exciting light.

What does NZT *do*? Eddie asks, when given the drug: 'does it increase anal retention?' (i.e., strengthen self-control?). But the impact is 'Lacanian' rather than 'Freudian'. After swallowing it, the 'symbolic order' of letters, figures, numbers and other kinds of data opens up to him. Letters fall like manna from the New York sky. Words appear on paper all by themselves (as if the unconscious speaks). Desire becomes text, and Eddie (unsatisfied with prolific authorship), becomes a stock market virtuoso overnight: a miracle of plasticity. The stock market is the place to be. With its complexities and ceaseless motion, the 24-hour global network of trading systems is a template for human consciousness, a collective nervous system, a global brain, allowing him to tune in to the dynamics of global existence.

The drug affects his whole ambiance. Manhattan suddenly looks quite different. Eddie is not only hyperintelligent, but also irresistibly seductive. He wins back his girlfriend and easily seduces one beautiful woman after another. His vivacity, pace and energetic aura are simply overwhelming. Besides lifting his inhibitions, NZT produces a state of *jouissance*, enabling him to plug into the vibrations of Manhattan, infecting others with his surplus of energy and enjoyment. But there is an uncanny side to it. He becomes an ICT 'monster', a 'Frankenstein of cyberspace', a walking version of the chess-playing computer *Deep Blue*, running into street fights and even killing one of his dates.

Mirrors play an important role. At various points, we find Eddie standing in front of them, assessing his progress. At the start of the movie, Eddie asks the audience to take a critical look at him: 'Look at me'. How could I allow this to happen, how could it come to this? Via mirrors (in various locations: hairdressers, clothing stores, bathrooms, bars, hotel lobbies) we witness the transformative process, evolving in a leap-like fashion, from shabby would-be writer into highly successful businessman, mingling with the great and powerful. Yet his mental acuity and hypermasculine self-confidence is a façade, a temporary foil. His basic vulnerability cannot really be concealed. Beneath his entrepreneurial surface, the divided subject (with its anxieties, inhibitions and vulnerabilities) continues to loom. Bereft of NZT, the 'splendour of the movie hero' quickly evaporates.

The downside is revealed to him via a television screen, during a meeting in a fashionable hotel, while suffering from an NZT hangover. One noticeable side effect of NZT is memory loss. Parts of his life are suddenly erased from his memory files. The night before, an enchanting woman, bewildered by his charms, had dragged him into her apartment to have sex with her. During an orgiastic love scene, her body became almost cubistic, so that shoulders, breasts, arms, legs and so on seemed disconnected. Eddie inhabits a surrealistic fragmented dreamworld, and this is reflected in the bodies he encounters. It becomes increasingly difficult to put these fragments together again; the gaps and ruptures propagate, not only spatially and visually, but also temporally. Although his own memories of the wild night have vanished, a video screen informs him that the woman (whom he recognizes) has been brutally slain. He is the main suspect. Apparently, love and violence became intermingled, and sex gave way to brutal physical fighting. Mr Hyde is taking over. Eddie hires a very expensive lawyer to avert this potential blemish on his budding career. Nonetheless, like his revenues, the collateral damage of his rise to success increases in logarithmic fashion.

NZT alters synapse biochemistry, so that information glides through neural networks in a streamlined way (mobilizing full brain capacity), but Eddie also lives in a completely different environment. The pace and tonality of life have changed, much like his field of vision, the pallet of its colours, his experience of time. Looking down from his penthouse, Manhattan is at his feet, while all the city's landmarks are in view. But as a Manhattan celebrity, he is also *being* seen. By the mass media, by Van Loon (who tries to keep track of his doings, not without a sense of fatherly concern), but also by professional killers (who keep him in gun-sight, as it were). Video cameras in hotels and other semi-public places are keyholes into his life.

During one interesting 'gaze' scene, girlfriend Lindy is lying on the bed, looking at him, apparently waiting for something to happen, while Eddie is standing near the window, staring restlessly into the obscure, indistinct evening, catching glimpses of a third (invisible) gaze: the professional assassin who is monitoring him, encircling him: Eddie as a highly visible player, living in luxurious skyscrapers, a target to prey on and compete with.

The net result is fairly ambiguous. There is a significant increase in mental power and sexual attractiveness. The subject overcomes his inhibitions, his sense

of impotence. What he can do in just one day seems 'limitless'. But his talents are dependent on the unreliable object *a*, which can be present or absent (*Fort* or *Da*). He carries his pills in a secret pocket inside his jacket, close to his body, but his own organism cannot produce them. The supply of NZT remains under the control of others. Being 'on NZT', he clearly perceives the hazardous condition of his inflated ego. Being 'jacked in', he is haunted by the concern that he may become 'unplugged' one day. Without NZT, the dazzling rows of stock market figures quickly become incomprehensible 'hieroglyphs' again.

Van Loon and Eddie are entangled in an Oedipal (dialectical, master-slave) relationship. Van Loon wants Eddie to work for him. The big omnipotent father figure realizes his inability to process the information streams of high-tech venture capitalism himself. He depends on Eddie's unique partial organ to transform overwhelming data into management options. This inevitably makes Eddie increasingly powerful, while Van Loon's dependency increases. The bewildering complexity of electronic financial information is something which he can no longer handle, and Eddie seems to *have* what other people *lack*: An enigmatic talent, a secret algorithm, a gadget of some sort? Van Loon suspects something. He is a stern father, reproaching Eddie when, nauseated by NZT, he shows up too late at an important meeting, but also a benevolent father: 'I have opened a line of credit; you will be needing a few toys'. But Eddie first and foremost wants to regain his independence.

In the movie version, Eddie eventually outsmarts all the others, including the assassins, including Van Loon. He even beats Eiben-Chemcorp, the chemical company that produces NZT, by establishing lines of production of his own. In the end, 'Senator Eddie' seems ready to run for president. The novel ends on a different note. Eddie discovers that, from the very beginning, without his knowing, he was recruited as a research subject in an illegal drug experiment: 'a human lab rat (...) tagged and followed and photographed, and then discarded' (de Kruif 1945, 340), dying a miserable death as a fugitive when the NZT supply is discontinued for good.

Eddie the brain-doping addict is the counterpart of another stock character in Hollywood movies: the 'scientific genius', relying on exceptional giftedness rather than tablets – although 'gift' etymologically means 'poison' (φάρμακον). *A Beautiful Mind* (2001), based on a novel by Sylvia Nasar (1998), about mathematics prodigy and Nobel laureate John Nash, shows interesting parallels between the career curves of Eddie and John. The latter, a mathematician interested in economics and fascinated by the idea that drugs might heighten intellectual performance (13), is described as a scientist with 'an extra human spark' (12). His theory of 'governing dynamics' comes to him in a bar (when debating effective methods for seducing women), while at the Pentagon he astonishes fellow code-breakers by his remarkable ability to decipher encrypted enemy codes in his head. But there are serious side effects to 'natural' brilliance as well. Nash becomes increasingly paranoid, thinking he is followed and blackmailed, as does Eddie. The idea of being monitored and pursued by criminals and pharmaceutical companies may be a side effect of NZT. Nash becomes a psychiatric patient, a victim of

his giftedness, communicating with extraterrestrial civilizations in a closed ward, although eventually there is a happy ending.

Conclusion: The Icarus complex

Daedalus (the archetypal engineer) lives and works on a Mediterranean island, serving a powerful tyrant, who (considering that technical know-how = power) imprisons him. But Daedalus builds two pairs of wings (one for Icarus, his son) and escapes. Icarus enjoys flying so much, however, that he soars high up towards the sun. The wax melts and he falls into the sea and drowns.

For Gaston Bachelard (1943) this is the archetypal story connected with 'air' as the element of freedom and upward movement, but also with the anxiety of falling down, especially once we have reached sufficient height (*Fallhöhe* in German). It is the 'typical' dream of climbing (skyscrapers, for instance) until we are overwhelmed by vertigo.

This ancient myth provides the basic structure for *Limitless*, featuring Eddie as a hypermodern Icarus. Unlike prudent Daedalus, for whom wings are merely a 'means', upward mobility invokes in him an experience of *jouissance*. The urge to reach the highest possible altitude is irresistible. Manhattan is the island, Carl Van Loon the tyrant. The pair of wings is the appendix-like, detachable 'partial' organ, which (temporarily) suspends his discontent: a highly unreliable, lethal remedy. Cognitive enhancement represents a repetitive, disruptive desire, haunting us since time immemorial: a craving for 'verticality'. In Brueghel's version, Icarus falls into the sea *unseen*. Nobody takes notice of him anymore. Like Eddie in the novel, he dies an anonymous death. In the film version, Eddie's fabulous ascent continues for a while, whereas the critical examination of the role of pharmaceutical companies in the distribution of questionable drugs (an important issue in the novel) has disappeared, albeit not completely. The suggestion clearly is that everyone who functions on such a high level must, by definition, be 'on NZT'.

Note

1. In the film there are 'two' fathers. The 'real', disappointing father in whose footsteps Eddie does not want to follow is a dentist materials provider. Eddie has two options in life: either novel-writing or dentistry. Van Loon is the imaginary father, the big Other (cf. Žižek 2001, 124ff.).

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