The Trouble with Memory:
Reco(r)ding the Mind in *Code 46*

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Abstract
This paper explores several widespread anxieties surrounding the technological storage of personal memory as given shape in Michael Winterbottom's dystopian SF film *Code 46* (2003). This film features a variety of technological implementations and objects which disperse memories and the 'codes' of identity throughout the human body, a body easily 'read' by and 'connected' to other devices. The embodied mind here becomes a medium - a transmitter, receiver, and container of information - in itself. DNA analysis and the surveillance of memories are common practices in *Code 46*, which raises critical questions of memory privacy. Memory becomes dislocated and subject to change: moreover, the constant interplay between personal experience and recorded information rhetorically aligns the issue of embodiment and mind-body relations with that of data-storage and hardware-software relations.

This film hovers between fascination and fear, between the fantastic and the realistic, and between cautious and visionary expressions. The encounter between neurology and digital technologies is here envisaged along tropes and anxieties equally present in contemporary debates on technocracy and privacy. These tensions are addressed through the concepts of 'cross-memory' (originally an IT solution) and 'biomedia' (Eugene Thacker) in order to address a lively battleground between science, futurism, and critique.

Key words
biomedia, cinema, futurism, science fiction, surveillance, technocracy

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1. Introduction

Ever since its inception, the cinema has been said to exert a peculiar influence over our experience of remembering. The 'mediatisation of memory' is still a stronghold in western culture, an ongoing cause of concern in intellectual debate and a continuous, and multifaceted trope in popular culture texts – particularly in science fiction. This paper explores several widespread anxieties surrounding the technological storage of personal

memory as given shape in Michael Winterbottom's dystopian SF film *Code 46* (UK, 2003). Part science fiction, part romance, and part *film noir*-ish detective intrigue, this film presents itself most of all as a what-if scenario, the what-if being what might happen to our notions of individuality, freedom, autonomy, emotions, and memory if a number of contemporary developments were to progress into the future in ways that are - as far as we can judge from the here and now - not altogether implausible. *Code 46* presents a futurized technocracy, where authoritative control and intervention interfere with the personal use of memory and information, and where the possibility of manipulation extends the unreliability of all personal memories into the field of objective information. Furthermore, the film posits memory as a substitute or fix for diegetic incoherence, but at the same time takes a highly ambivalent stance toward the possibility of memory as a source of agency.[1]

Code 46 features a variety of technological implementations and objects which disperse memories and the 'codes' of identity throughout the human body, a body easily 'read' by and 'connected' to other devices. The embodied mind here becomes a medium in itself — a transmitter, receiver, and container of information. DNA analysis and the surveillance of memories are common practices in this world, which raises critical questions of memory privacy. Memory becomes dislocated and subject to change: moreover, the constant interplay between personal experience and recorded information rhetorically aligns the issue of embodiment and mind-body relations with that of data-storage and hardware-software relations.

Dystopian science fiction tales, from Huxley's *Brave New World* to films such as *Code 46*, are often used as reference points in debates on real-life developments and our technological future. In such debates these scenarios are cited as warning signs, as the hypothetical forebodings of what might be in store for us. As David Morley describes concerning increasingly constricting regulations for travel and credit documents in the 1990s,

> the seemingly dystopian vision of a future in which any form of travel requires specific authorisation, combining 'one-time use only' insurance and travel permits, as presented, for instance, in Michael Winterbottom's futuristic thriller film *Code 46* (UK 2003) begins to look eerily prescient.[2]

Apart from concrete enlargements of contemporary situations such as *Code 46's* take on authoritative surveillance, it also plays on (and in effect mobilizes) less well-defined anxieties concerning information technologies and their effects on our sense of privacy, individuality, and ultimately our subjectivity.

One pertinent question in current future-preoccupations concerns the compatibility of personal memories and technological systems of information storage, inscription, and retrieval. If neuroscience can now map our brain activity, how long will it take before scenarios of memory manipulation by digital means become a reality, or before we can upload our thoughts in such a way that they could live on as data running on a mind-simulating program? Ultimately, the core question here seems to be whether mental processes, in a sense, 'run digitally', or in an idealist-posthumanist phrasing, whether the digital is the key that will unlock thought from the confines of the brain and body.

This question lies exactly on the crossroad between two pertinent contemporary paradigms in scientific innovation: first, that of digital information technologies, and second, that of neuroscience. It follows that we might want to examine the inherent risk of manipulation here: if technological systems could access and communicate with mental processes, then how do we protect our brains from those with an interest in their contents? Assessing the validity of such concerns is not the concern of this paper; my aim is, rather, to map the cultural imaginary from which these questions arise.

2. Cross-memory: the battle over information

In a brief synopsis of its over-packed plot, *Code 46*'s near-future scenario presents an American corporate fraud detective, William (Tim Robbins), traveling to Shanghai to investigate the forgery of travel documents at an international visa-issuing organization.[3] His instant attraction to the culprit, Maria (Samantha Morton), however, causes him to ignore her crime, and the two embark on a brief romance. Weeks later, William is sent back to Shanghai because the fraud activities have continued, and he discovers that Maria has been hospitalized after an abortion.

Due to widespread IVF and cloning practices, "all prospective parents should be genetically screened before conception", so states the 'Code 46' regulation which gives the film its title. If they are genetically related, conception is considered a criminal act, which turns out to be the case with the pregnancy resulting from William and Maria's fling. The authorities have therefore removed both the foetus and Maria's memories of William. Their intuitive love, however, continues, and the couple makes an unsuccessful attempt to escape from 'the system'. Eventually the system has its way and restores William to his (married) life, his memories of Maria surgically removed, whereas Maria is expelled from society to live as an outcast *al fuera*, in the vast desert wastelands that presumably testify to the effects of global warming.

Some contemporary developments enlarged in *Code 46* are globalization/urbanisation, erosion of the earth due to global warming, access

to genetic information, transplantation of body parts, risk assessment and insurance, surveillance of citizens through the centered gathering of locative, financial, and medical data, and concomitant with this, the restriction of individuals' freedom of choice. It clearly hypothesises the future of human living in the age of information and globalisation, perfectly fitting Richard Koeck and François Penz's description of the "near-future film":

> In the context of the near-future theme, cinema offers a body of films which emphasize the portrayal of urban visions 'just around the corner' as oppposed to science fiction films which tend to portray worlds many decades ahead.[4]

On top of all this, the script includes many more far-fetched innovations and situations, such as the 'Code 46'. Also, neurobiology in this storyworld is advanced enough to enable the removal and insertion of specific memories in a human brain. Furthermore, it features mental software components entitled 'viruses', which enable specific skills such as mind-reading and knowledge of foreign languages, or disable unwanted behaviour.

In its engagement with the future of (bio)information technologies, this film equally fits Richard Coyne's description of sophisticated "contemporary digital narratives", which often oscillate between imagining both liberation and control.[5] While these narratives "bring out the ambiguities of the IT phenomenon, presenting the prospect of unmediated and free interaction between people and the creation of new modes of community", Coyne argues, "they also present the undesirable prospect of electronic surveillance and attempts to control people's lives."[6]

Code 46's neuro-technological practices effectively blur any existing lines between mental and mechanical modes of information processing, especially with respect to memory. Memory, either personal or 'mechanical', becomes essentially discontinuous, malleable, and fragmentary, and in constant need of re-definition. For such divergent functions and functionings of memory I propose the term *cross-memory*, originally used in the context of long-distance IT communications and external or virtual data storage.[7] Dislocated, temporally flexible, and severed from the structuring principles of chronology and causality, cross-memory practices as applied to biological and psychophysiological data in this film render all information instantaneous and malleable.

Cross-memory instances in *Code 46* such as a mental virus that delivers instant knowledge of Mandarin Chinese and the virtual-surgical alteration and removal of personal memories, here illustrate how memory can (and will) extend to the body, into external objects, and across people - especially with the help of neuroscience. This suggestion peaks in one

extremely illustrative example: Maria shows William a collection of nostalgic memories that seem to have materialised straight from her own mind. When after her abortion William tries to convince Maria of their previous acquaintance, he finds hard evidence in a remarkable blurring between the mental and the mechanical registration of events: an album in which Maria has stored the memory of their first night out. This object resembles a photo album, but contains moving images and sounds precisely from Maria's vantage point during the scene which showed the actual event. No diegetic recording was made at the time, but upon their return home, Maria mentally 'uploads' a memorable event into this album before handing it to William to show him her childhood 'pictures'. When William returns to Shanghai and Maria does not recognise him, he uses this recording (in which he is also prominently visible) in order to remind Maria of their romance.

What is ultimately at stake in *Code 46* is the way technological developments, especially digital technologies that monitor individual behaviour, may affect the emotional lives of subjects. This society is marked by a profound limitation of personal freedom to move, but also by a profound increase in the individual's access to information (both in spatial and temporal dimensions; William has full access to biographical and otherwise personal information of individuals on the other side of the world; Maria has full access to representations of her own memories). This last instance, however, actually shows an affective relation with a *very* technological device, one that in its recording capacity seems to transgress by far the surveillance powers of the system. The way the album looks—it fantastic, kinetic surface, its immediate access to a wide variety of historical events, its materiality— and the affectionate manner in which Maria handles it, in fact, show a very technophilic and emotional engagement with a device that could be extremely powerful and dangerous when put to less personal use.

This film invests great belief in the powers of love and emotion to overcome the harsh interventions of the authorities, as witness Maria's enduring love for William after the 'removal' of his presence in her memory. With information failing to prove rational grounds for acts or decisions, memory steps in as motivation for agency. But with so many unreliabilities on top of one another, the resulting subjectivities and agency become inconsistent, at the very least.

3. **Surveillance and biomedia**

The fascination with distorted memory in *Code 46*, and many recent films similar in topic matter, might signal an anxiety concerning the loss of reliable representations and stable information as a result of digitization. Without attempting to assess the justness of such anxiety, I suggest that memory here might function as a trope for (media) representation and

information in general. The technological gathering, storage, handling, and (re)ordering of information by digital means is here extended fully into the human mind and body, pushing citizen control to new limits.

Addressing *Code 46*'s take on surveillance systems, Peter Marks observes how "the pass system, while enabling for those with the correct documents, also functions as a tracking device, and activates a holding system."[8] Marks takes this as a direct comment upon contemporary developments:

> In exploring the surveillance systems that maintain order and underpin the materialist wealth of the utopian space, as well as punishing those who threaten the state's stability, *Code 46* prompts its viewers to critically assess the competing values justifying surveillance in an environment complex and contradictory enough to parallel our own.[9]

More interesting than the socio-political dimensions of this surveillance system, however, I find its *pervasiveness*. Whereas the *papeles* system is a straightforward extension of existing bureaucratical policies, the aforementioned instances of cross-memory control signal a more specific development: that of using biological information for a variety of monitoring purposes. These are clear instances of what, whether actual or fictional, Eugene Thacker calls *biomedia*: "a situation in which a technical, informatic recontextualization of biological components and processes enables the body to demonstrate itself."[10] The contexts of biomedia vary from science fiction to medical and military practice; Thacker stresses crucially that this biomedia is not as much a historical point of rupture but has rather come to the fore under the vast extensions of its domain that have come with cybernetics and advanced digital technologies.

The human body has always functioned as a carrier and transmitter of information; philosophers from Augustine to Heidegger, to media theorists such as David Morley and Friedrich Kittler, have consistently emphasized that mediation is as natural to human conduct as the use of any tool. The current pervasiveness of concepts such as code and pattern, however, is often perceived as 'unnatural' with respect to biological systems. Thacker states that

> In this almost mythic encounter, an assumedly preinformatic body confronts a set of techniques and technologies whose central aim is to render everything as information—not only can everything be understood as information, but information is everything, in that every thing has a "source code." While some perspectives see this

> as an emancipatory promise of the posthuman, other, more critical perspectives have questioned the hidden theology masked by the technical speak of pattern, emergence, and code.[11]

In this respect, biomedia becomes almost analogous to what N.K. Hayles has dubbed the "Regime of Computation"; the paradigmatic shift to code and simulation that took place with the advent of cybernetics in the 1950s, and that is currently pervading most any field of science and culture. Hayles wonders how

> the "new kind of science" that underwrites the Regime of Computation can serve to deepen our understanding of what it means to be in the world rather than apart from it, comaker rather than dominator, participants in the complex dynamics that connect "what we make" and "what (we think) we are."[12]

Similar to Hayles' focus, Don Ihde addresses the *Matrix* film series as symptomatic of a current crisis in theories of mind:

> the late modern adaptation of computerization, situated in proximity with that most "Cartesian" of late modern sciences, neurology and some versions of cognitive science, give us the clue for the popularization of this epistemology engine in the *Matrix* series. [..] Today's brain, the homunculus's new version, is now an autonomous "computer" or "hard-wired" brain which de-codes "information" which comes in through the various sense organs […] and if this is so, there is only a small step between this notion of brain and the possibility of *The Matrix*. Or, reversing the metaphor, *The Matrix* is a cinematographic version of the latest epistemology engine: inner brain processing interacting with external data-code input.[13]

Similar reconceptualizations of the mind are forwarded in *Code 46*: underlying all memory interventions in its story is the assumption that mental processes run in a kind of code, recognizable by, interchangeable with, and compatible to technological systems for the storage and handling of information. This is a rather common trope, directly related to recent developments in neurobiology, cognitive science, and cybernetics which

threatens our conventional distinctions between the objective vs. the subjective, the fixed vs. the permeable, and the 'natural' vs. the 'technical'.

4. Conclusion: re-coding the mind

Code 46 draws a powerful triangle between agency, memory, and information, none of which are stable and measurable properties but rather permeable and conflicting ones. The omnipresent chance of memory alteration or manipulation here problematizes any sense of agency. This, however, has more to do its society's handling of information than with memory per se: cross-memory practices in these films allow for much deeper modes of data-gathering and state intervention than we like to imagine possible in our actual lives.

Related to all this, the film takes up the haunting question whether human perceptions can be equated or described in terms of digital information processing. The relative ease with which tissue and technics are coerced into two-way interaction in physical prostheses and cyborg animals for instance, suggests that, indeed, human perception is compatible with digital information.[14] A recent survey article in Scientific American, however, is reluctant to embrace such visionary predictions with respect to human cyborgization:

> Fulfilling the fantasy of inputting a calculus text – or even plugging in *Traveler's French* before going on vacation – would require far deeper insight into the brain signals that encode language and other neural representations [than is currently available]. Unraveling the neural code is one of the most imposing challenges in neurosciences.[15]

Rudimentary as current biomedia innovations such as neuroprosthesis (advanced robotic surrogate limbs), they prompt wild imaginations such as the technological storage of consciousness at some point in the future. Theoretically, mental activity *can* to some extent be digitally stored and altered on a file/piece basis, and we can't be sure how much good or bad this will do. However futuristic in their imagined technologies, the theories-of-mind of films such as *Code 46* and *Eternal Sunshine of the Spotless Mind* really aren't that far off.[16] Exploring the possibilities of memory manipulation by digital means, they bring the fragility of mental processes to its extreme and hypothesize on the continuous engagement between human subjectivity and technological mediation.

Briefly consider, though, the tempting prospect of Maria's memory album. If tomorrow you could use your creditcard or online banking account to virtually transport your 'databody' through cyberspace (as many people do on a daily basis, and you can be sure your bank is doing for you this very moment), to a shop in Shanghai which will sell you such an album – if you

could, would you choose not to do because this object would be in support of a move towards the encoded 'virtualization' of 'actual' experience, or simply revel in the magic wondrous gadget? And think again: to what extent, in your appreciation, do Maria's memory films really differ from the nostalgic video and digicam recordings of yourselves and your loved ones which you doubtlessly already keep safely stored at home, or from the precious moments safely stored in your mind, which you can remember any way you want to?

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Notes

[1] Parts of this paper derive from, or were developed during the course of, a collaborative essay: Pepita Hesselberth and Laura Schuster, 'Into the Mind and Out to the World: Memory Anxiety in the Mind-Game Film', in Jaap Kooijman et al. (ed.), *Mind the Screen: Media Concepts According to Thomas Elsaesser*, Amsterdam: Amsterdam University Press, 2008. I am greatly indebted to Pepita for her many suggestions and keen insights, and for allowing me to rework this product of our mutual interest in the topic of distorted memory in contemporary cinema.

[2] D Morley, *Media, Modernity and Technology: The Geography of the New*, London, Routledge, 2007, p. 240.

[3] *Code 46*'s explicit near-future reference should be taken with a grain of salt here; close narratological analysis and some calculation concerning even the most sped-up of plausible time-lines of cloning, all more or less inscribed in the filmic text, reveal a gap of at least 80 years between *Code 46*'s present and ours of 2009.

[4] R Koeck and F Penz, 'Screen city legibility', *City* 7.3, 2003, p. 368.

[5] R Coyne, *Technoromanticism: Digital Narrative, Holism, and the Romance of the Real*, Cambridge, MIT Press, 1999, p. 25.

[6] *ibid.*

[7] See for instance Answers.com: "Rather than using a fixed address, cross memory services use a method of indirection whereby the calling program obtains a token that serves as a pointer to the actual routine." No author, retrieval date February 6th, 2009, http://www.answers.com/topic/xms.

[8] P Marks 'Imagining Surveillance: Utopian Visions and Surveillance Studies', *Surveillance & Society* 3.2/3, 2005, pp. 232.

[9] *ibid*., p. 233.

[10] E Thacker, 'What is Biomedia?', *Configurations* 11, 2003, p. 78.

[11] E Thacker, "What is Biomedia?" *Configurations*, 2003, 11: p. 47.

[12] N K Hayles, *My Mother Was a Computer: Digital Subjects and Literary Texts*, Chicago/London: University of Chicago Press, 2005, p. 242.

[13] D Ihde, 'Technofantasies and Embodiment', in *The Matrix in Theory*, M Diocaretz and S Herbrechter (eds), Amsterdam/New York, Rodopi, 2006, p. 160.

[14] See for instance J Marshall, 'The cyborg animal spies hatching in the lab', *New Scientist* 2646, 2008, p. 41: "The HI-MEMS project aims to merge artificial control systems with those of the insect by inserting the devices during the pupa stage. The idea is that as new organs and tissue develop, they will create strong, stable connections between the devices and the insects' neural or muscular tissues. The control devices become part of the adult insect's body."

[15] G Stix, 'Jacking into the Brain', *Scientific American* 299.5, 2008, p. 59.
[16] See José van Dijck, "Memory Matters in the Digital Age", *Configurations*, 2004, 12: 349–373, for details.