Introduction

SCHIZOANALYSIS, DIGITAL SCREENS, AND NEW BRAIN CIRCUITS

The film *Michael Clayton* (Tony Gilroy, 2007) opens with a delirious monologue.[1] We see first the lights, windows, and screens of New York City by night; then the camera moves slowly to an inside view of one of many office buildings, as a voice, later identified as Arthur Edens (Tom Wilkinson), speaks of a moment of clarity he experienced while exiting the "vast and powerful law firm" for which he works. "The time is now," he stutters, signaling his having "been reborn" away from his career at the firm, which "excrete[s] poison" into humanity. He has been defending a company called U/North from a three billion dollar class action lawsuit for biopollution. During a meeting with the victims of U/North, Edens snaps. His encounter with one particular young female victim, Anna (Merritt Wever), who lost her parents to U/North soil pollution, flicks a kind of synaptic switch in his mind. His ordinary way of thinking—in support of the multinationals he is supposed to defend—abruptly changes, and he begins to see things anew. He stops taking his medication for manic depression, and his own mad revolution against his habituated behavior is finally enabled to foment. As a protest on behalf of the victims whose claims he is supposed to ignore, he undresses in the middle of a U/North hearing, embarrassing both his own firm and U/North. His friend Michael Clayton (George Clooney), who is the law firm's fixer, is called in

to talk Edens back into medication and normative professional behavior. Edens refuses. In a key scene in the middle of the film we see Edens in the center of a New York City street, traffic assaulting him from all sides and, more important, hundreds of city screens surrounding him, with ads for "TV on your phone" and food technology for U/North. While the camera circles Edens, showing the vortical stream of images, lights, and sounds that surround him, he remains frozen. In the midst of all this insanity we watch as Edens realizes something in this moment (flagged by the opening monologue): that the time (to change) is now.

Arthur Edens, delirious and intelligent, caught up in the vortex of the contemporary urban cityscape full of networked electronic and digital screens—screens that are themselves always already connected to assemblages of power, capital, and transnational movements of peoples, goods, and information—is a typical character in a new type of cinema belonging to twenty-first-century globalized screen culture that I want to explore in this book and that I will describe as "the neuro-image." For several reasons the film *Michael Clayton* brings us to the heart of what this book is about. Edens's insanity points to the first aspect of the neuro-image that I want to take into account: it carries inside it some form of schizoanalysis or collective analytics and is therefore particularly indebted to the work of Gilles Deleuze and Félix Guattari on capitalism and schizophrenia.[2] Many of the questions that I address in this book pertain to the schizoanalytic nature of the neuro-image: What does this image type entail? How does schizoanalysis, as defined by Deleuze and Guattari, relate to pathological schizophrenia and screen culture? What are its (cultural) symptoms? What are its philosophical dimensions and its political and ethical implications?

A second important aspect of the neuro-image we find in *Michael Clayton* is the omnipresence of media screens. Not only is this scene showing Edens in the streets of New York quite typical for contemporary screen culture, but throughout the film, small and large screens appear everywhere: navigation displays, computer screens, cell phones, television sets, urban screens, and surveillance technology; they are the markers of both a typical twenty-first-century media city and the practices of everyday media use.[3] The neuro-image is part of this networked media practice, related to digital technology's ubiquity, and engages with these technologies

in "an internal struggle with informatics."[4] This struggle, according to Deleuze, is fundamental to cinema's very survival as a "will to art": "An original will to art has already been defined by us in the change affecting the intelligible content of cinema itself: the substitution of the time-image for the movement-image. So that electronic images will have to be based on still another will to art, or on as yet unknown aspects of the time-image."[5] This book will make sense of the neuro-image's relation to the digital, through reference to current debates and research in contemporary screen culture. Indeed, (how) does the neuro-image relate to a "will to art" in the context of this electronic image culture, especially of contemporary information overload? Might it lead us to discover as-yet-unknown aspects of the time-image? If so, is the neuro-image a special type of time-image, or should we speak of a third image type? A return to Deleuze's cinema books but also to *Difference and Repetition* will be necessary to propose some answers to these questions.[6]

In *Michael Clayton* Arthur Edens's madness is repeatedly (but partially) referred to in terms of a chemical unbalance in his neurological system. "Part of it is chemical, part of it is insanity, but for part of it you are also right," Clayton tells him. This insistence on brain processes introduces a third important aspect of the neuro-image. Deleuze has famously argued with regard to the ongoing development of cinema that "the brain is the screen":

> The brain is unity. The brain is the screen. I don't believe that linguistics and psychoanalysis offer a great deal to the cinema. On the contrary, the biology of the brain—molecular biology—does. Thought is molecular. Molecular speeds make up the slow beings that we are. . . . The circuits and linkages of the brain don't pre-exist the stimuli, corpuscles and particles that trace them. . . . Cinema, precisely because it puts the image in motion, or rather endows the image with self-motion, never stops tracing the circuits of the brain.[7]

If the movement-image and the time-image are related to certain circuits in the brain, is it then possible to distinguish yet other aspects of the brain-screen that are typical for the neuro-image? To answer this question, I will consider biological aspects and principles of the brain alongside recent findings in neuroscience and relate these to the emerged features of the neuro-image. Deleuzian (schizoanalytic) philosophy, cinema in digital networked screen culture, and neuroscientific findings are thus the three

domains this book brings together to comprehend this new image type, its form, and significance.

Schizoanalysis: Delirious Insights, Illusionary Realities, Affective Truths

As Arthur Edens insists in *Michael Clayton*, it is important to see his delirium not as "just madness." Rather, Edens's symptoms, and schizophrenia more generally, can be considered as a sign of time. In his introduction to Deleuze's *Essays Critical and Clinical*, Daniel Smith explains: "Authors and artists, like doctors and clinicians, can themselves be seen as profound symptomatologists, . . . 'physicians of culture' for whom phenomena are signs or symptoms that reflect a certain state of forces."[8] Smith articulates several themes in Deleuze's writings on literature that are important for understanding the ways in which schizoanalysis relates the "clinical" and the "critical"[9]—through the destruction of the world (singularities and events), the dissolution of the subject (affects and percepts), the disintegration of the body (intensities and becomings), the "minoritization" of politics (speech acts and fabulation), and the stuttering of language (syntax and style). Without going into Smith's brilliant level of detail on each, I would like to consider these "themes" as accordant with schizoanalytical powers. Insofar as they relate to general contours of the neuro-image,[10] they mark out a Deleuzian symptomatology that I will develop in detail in each chapter, in relation to contemporary media culture and neurobiology. At this point I will return to *Michael Clayton* and Arthur Edens's monologue to briefly introduce certain characteristics of these powers of schizoanalysis.

First of all, the fundamental delirious character of Edens's opening monologue is most powerfully expressed in his intense description of becoming-other: from reborn, to near-dead, to emerging from the "asshole of a powerful organism," he creates a body without organs that resists and refuses the normal organization of his corporate body, and all of the institutionalized power structures that it involves. It is as if inorganic life traverses his body, turning the architecture of his corporation into a body and his own body into something inorganic. Smith explains that "according to Deleuze and Guattari, what we call a 'delirium' is the general

matrix by which the intensities and becomings of the body without organs directly invest the sociopolitical field."[11] So this power of the delirium is not just the product of the mad but also a particular form of resistance (to ways of life) in reality, as well as in art. Arthur Edens, in his delirious perception, all of a sudden sees the "madness" of contemporary capitalist culture and refuses to continue playing this infernal game that relies on the cynical abuse of human and natural resources. The film quite literally asks us to consider Deleuze's rhetorical question regarding cinema's situation: "Surely a true cinema can contribute to giving us back reasons to believe in the world and in vanished bodies. The price to be paid, in cinema as elsewhere, was always a confrontation with madness."[12]

So the first power of schizoanalysis inherent to the neuro-image is the power of the delirium, a dangerous, intense, and resisting force of schizoflows and overabundance. It must be noted, too, that the devilish difficulty we have with these schizoforms of resistance is to see that they are an immanent form of resistance, which means that the system against which such forms struggle functions according to the same schizophrenic logic. Capitalism and schizophrenia, as Deleuze and Guattari have shown so powerfully, belong together. Capitalism follows a schizophrenic logic that at the same time calls forth its own resistance. The delirium of the schizo gives us insight into this double logic of contemporary culture: Edens is part of the maddening system; only in confronting his madness can he resist the inhuman madness of the system. In his schizoid delirium he gains sense of a minority position—in this case that of the victims of U/North—and in this way tries to tell a different story, one that potentially shatters the majoritarian forces of capitalism. More generally put, the neuro-image acknowledges that there is no safe or morally transcendental position from which we can resist. Instead, we discover the need to develop multiple forms of resistance from within the system, while always running the risk of being even more fully captured or overwhelmed by its logic.

The schizophrenic confrontation with madness can be related to two important "schizophrenic symptoms" that contemporary culture must confront more than ever before: the powers of the false and the powers of affect. These are the second and third powers of schizoanalysis at stake in the neuro-image. In the cinema books Deleuze discusses the powers of the

false with respect to the Nietzschean cinema of Orson Welles. As Welles's characters show, the false can be "base" and deadly, but it can also be "noble" and creative.[13] In *Michael Clayton* the powers of the false play out in different ways. Clayton's job is to "adjust the truth" (one of the taglines of the film). He has to make sure that rich clients who run into trouble, such as U/North, get away with the damage they have done in the least disabling way. Clayton has to put the manipulating powers of the false to work in favor of the capitalist machine. The powers of the false play quite a different role when Edens apparently hallucinates in his delirium, but these hallucinations, the film suggests, are more real than what Edens formerly took for reality. Through them, Edens is able to really see how the corporate system works against humanity. Here, then, the powers of the false (as hallucinations on Edens's brain-screen) work against the system. I will argue that contemporary culture has moved from considering images as "illusions of reality" to considering them as "realities of illusions" that operate directly on our brains and therefore as real agents in the world. While recognizing the truth of his corporate life in his hallucinations, Edens also very strongly believes in the affirmative powers of this apparent fiction. Differently again, the powers of the false play out in Michael Clayton's son Henry's (Austin Williams) obsession with the multiplayer game *Realm and Conquest*. As a contemporary transmedial narrative (a characteristic form of digital screen culture, as we will see), this game appears in the film itself on computer screens, in Henry's stories, and in a book that Edens reads avidly—underlining, highlighting, and taking important clues from it as he attempts to prove that his hallucinatory visions are real. Here, the powers of the false become more generally defined as a belief in fiction, an aspect of the neuro-image that I will explore in greater detail in Chapter 2.

The power of affect is equally important, relating to a radical rephrasing of the question of the subject in Deleuze and in contemporary culture. Edens is engulfed with overwhelming sensations and suddenly sees with stunning clarity the affective truth of his actual situation. His office building becomes a filthy body, and he becomes the excrement of this body, covered by the dirt of what is going on inside the building. These feelings and visions go beyond his own individual affections and perceptions. As sensations of becoming-other, they can only be felt. This is a confrontation with the virtual where individual identities are lost. Smith recalls Deleuze's reframing of the question of the subject—"How

can the individual transcend its form and its syntactical link with a world in order to attain the universal communication with events?"—and explains Deleuze's contribution toward an answer in this way:

> What he calls "schizophrenization" is a limit-process in which the identity of the individual is dissolved and passes entirely into the virtual chaosmos of included disjunctions. . . . The self is a threshold, a door, a becoming between two multiplicities, as in Rimbaud's "I is another." . . . In a becoming, one term does not become the other; rather, each term encounters the other, and the becoming is something between the two, outside the two. This "something" is what Deleuze calls a pure affect or percept, which is irreducible to the affections or perceptions of a subject.[14]

The autonomous power of affects and percepts (and their principles of relation to feelings and perceptions) is thus the third great schizoanalytic power that I will investigate in relation to a possible definition of the neuro-image.

If schizophrenia and schizoanalysis are part of an immanent system, one of the key questions that keeps imposing itself is this: Where in the immanent system can "schizoresistance" occur? Although it is possible to argue that only art can create these forms of resistance (as Deleuze seems to argue in his preference for European art cinema in *The Time-Image*), I would like to propose that it is much more logical that resistance (perhaps only moments of resistance), and also the "will to art" that Deleuze emphasizes, can be found in many different places in contemporary audiovisual culture, including dominant and popular art forms. (This is not to say, of course, that all forms of screen or media culture are artistic.) I will show, accordingly, that the delirious powers of the false and powers of affect are related to a "becoming-minoritarian" of (cinematographic) language that indicates its political dimensions. As Smith explains, actual conditions of immigration, for instance, create minoritizations of languages that affect both minority and hegemonic languages:

> For the more a language acquires the characteristics of a major language, the more it tends to be affected by internal variations that transpose it into a "minor" language. English, because of its very hegemony, is constantly being worked on from within by the minorities of the world, who nibble away at that hegemony and create the possibility of new mythic functions, new cultural references, new vernacular languages with their own uses.[15]

In cinematographic language the language of Hollywood is the hegemonic language. Yet it is possible still to consider *Michael Clayton* as a

minoritarian Hollywood film, even if it uses big stars. Produced by a small company, Samuels Media, it was not exactly a blockbuster; at the same time, however, its thrilling form, political content, and the presence of George Clooney, known for his political commitments, and Sydney Pollack (who plays his boss), recall the powerful political thrillers of the 1970s such as *The Parallax View* (Alan J. Pakula, 1974), *Three Days of the Condor* (Sydney Pollack, 1975), and *All the President's Men* (Alan J. Pakula, 1976). If we can consider that in *Anti-Oedipus* Deleuze and Guattari refer to schizophrenization as a process for understanding the ways in which capitalism produces its own immanent "antiproduction,"[16] then we can understand the contemporary media culture in which this film plays a part as a schizoid system full of abstract and experimenting machines that produce both art (creation of the new) and its opposites (manipulation, control, mediocrity). The neuro-image is part and parcel of these variegating media machines. How to define art and resistance in the contemporary media culture, and indeed decipher boundaries for the neuro-image, remains an important question that will return in this book. But let me first introduce in more detail some aspects of contemporary media culture that are important as the "natural" milieu for the neuro-image.

Digital Screens: Networked Software Cultures, Deep Remixability, and Database Logic

The digital turn in culture at large, and in media culture specifically, is the context in which the development of the neuro-image must be situated. Much has been written about this turn. Therefore, without proposing an exhaustive description of the complexity and heterogeneity of digital culture, I simply want to mention three elements that are most important for the framing of my analyses of the neuro-image: networked software cultures, deep remixability, and database logic. Contemporary culture is increasingly generated by software. According to new media theorist, practitioner, and historian Lev Manovich, software permeates all areas of contemporary societies: "The school and the hospital, the military base and the scientific laboratory, the airport and the city—all social, economic, and cultural systems of modern society—run on software."[17] Particularly in media theory, extensive recognition is now given to both

"the role of software in forming contemporary culture, and cultural, social and economic forces that are shaping development of software itself."[18] Software, as Manovich has argued most prominently, enables creation, publishing, accessing, sharing, and remixing images, moving image sequences, 3D designs, texts, maps, and other interactive elements—as well as various combinations of these elements—in websites, motion graphics, video games, commercial and artistic installations, and virtually every niche of our increasingly technocratic culture. Software also provides tools for social communications and the sharing of information, experience, and knowledge, such as web browsers, email, wikis, virtual worlds, and other Web 2.0 platforms such as Facebook, MySpace, Flickr, and YouTube.[19]

The ubiquity and diversity of cameras and screens is a particularly prominent aspect of this networked, "softwarized," digital culture. Film cameras have long since entertained or rallied against the contributions of many other camera types, including television cameras and surveillance cameras and more recent proliferating consumer cameras on mobile phones and other portable devices. Screens have multiplied everywhere, are more and more linked to all kinds of software, and, despite retaining their media-specific differences, are connected in vast distributed networks. As Alexander Galloway points out in his book *Protocol*, such networks are not limitless but work increasingly as complex diagrammatics. And as these more elaborate kinds of systems (of relations), networked systems are neither open nor closed. A network, according to Galloway, is "a set of nodes and edges, dots and lines. The dots may be computers (server, client, or both), human users, communities, LANs, corporations, even countries. The lines can be any practice, action, or event effectuated by the dots (downloading, emailing, connecting, encrypting, buying, logging on, port scanning)."[20] To comprehend difference or change within networks, you can do a number of things with such a diagram, Galloway indicates. You can connect the dots, disconnect them, or even delete them. You can filter out which dots are connected or create portals for the creation of future dots. "In short, a network-as-diagram offers all sorts of possibilities for organization, regulation and management," he suggests. "The Internet is not simply 'open' or 'closed' but above all a form that is modulated," which means "information does flow, but it does so in a

highly regulated manner" more accurately described as "regulated flow."[21] Many others have commented on the network paradigms of contemporary culture. The specific inherencies of the neuro-image to network culture will return in some of the case studies in this book.

Another characteristic of digital software culture is that social software—software that has enabled the emergence of Web 2.0—has transformed the cultural logics of the Internet itself from a hypertext environment of interactive applications into a "participatory culture" populated by so-called prosumers (active content-producing consumers). Citizen journalism, YouTube (and other online file-sharing cultures), blogging, and transmedial storytelling all incorporate audiences across different media forms while gathering them in closer interrelation. These combinations of (digital) cultural shifts are what Henry Jenkins has characterized as "convergence cultures."[22] How does the neuro-image relate to the spirit of Web 2.0? And in what specific ways? Connected to participatory culture is the fact that software has made culture "deeply remixable." This means that, as Manovich explains in *Software Takes Command*, not only can content be remixed and recombined, but also different technologies (such as design, animation, and live action) can be recombined.[23] Mash-ups, remakes, samplings: contemporary culture is profoundly fragmented and constantly recreated. What were once avant-garde strategies have now become everyday practices. Professional filmmakers increasingly use cheap digital cameras and are interested in creating low-tech DIY-aesthetics, as exemplified par excellence in the Dogme 95 movement initiated by Lars von Trier and Thomas Vinterberg.[24] At the complete other end of such digitally shifted aesthetics are the ever more sophisticated "high-tech" special effects and the latest generation of 3D cinema. So how do we define a will to art in this context, when we can observe a democratization of low-cost artistic strategies on the one hand and a high-cost form of new artisanal computer work on the other?

The deep remixabilty of contemporary digital culture is also a result of the database becoming a basic unit of organization, creation, and control. In *The Language of New Media* Lev Manovich has called this the database logic of contemporary culture. After the arrival of the World Wide Web, Manovich argues, "the world appears to us as an endless and unstructured collection of images, texts, and other data records," so "it is

only appropriate that we will be moved to model it as a database. But it is also appropriate that we would want to develop a poetics, aesthetics, and ethics of this database."[25] This prominence of database form impacts contemporary culture to perpetuate "archival intensity," a term introduced by Jacques Derrida in his seminal book *Archive Fever*.[26] We have moved into an era where so much material previously hidden in closed archives is becoming increasingly available, often through online databases, which, because of their organization and coding, are able to give fragments or snippets of historical data and images that can be recalled in nonchronological order. This abundance of historical audiovisual material, available in new but quite specifically ordered ways, affects our prior understanding of history and memory. Combined with the fact that the traditional (and scholarly) notion of media objects as "texts" seem to be replaced by the notion of media operating as "dynamic software performances," memory and history are consequently (and increasingly) seen as dynamic, as well, and are continually transforming in an open archive.[27] Although the (media) text in itself has certainly not disappeared, it could be argued that contemporary media in general is more fluid than the more or less stable text of the book and the classical film. So what does this mean in relation to our definitions of a new image type? Does the neuro-image testify to this contemporary database logic? And is it possible that this open and dynamic logic can trickle back to previous more stable image forms, destabilizing older media objects or allowing different readings of them in a database logical perspective?

Several art and media historians have analyzed changes to cinema in the digital age along these lines. Anne Friedberg demonstrates how the screen has multiplied in computer culture, yet the figure of the window as frame has remained prominent in today's screen culture "from Alberti to Microsoft," albeit with different characteristics, such as simultaneity and the multiplication of perspectives.[28] Nicholas Rombes has written about the aesthetic changes of cinema and cinematic experience in terms of mobile, remixed, fragmented, and nonlinear viewing in his book *Cinema in the Digital Age*.[29] Lev Manovich has ventured into a practice of "database filmmaking," which he calls "soft cinema," characterized by multiple screens, automatized selection parameters, and combinations of different media (animation, motion picture, graphics), the result of which is a work

of unlimited possible combinations and never the exact same film.[30] Matthew Fuller suggests that we see media culture in terms of ecologies of dynamic systems "in which any one part is always multiply connected, acting by the virtue of those connections, and always variable, such that it can be regarded as a pattern rather than simply as an object."[31] David Rodowick similarly recognizes that the new virtual life of cinema is driven by software but emphasizes that "concepts of image, screen, time, space, and movement are as relevant to contemporary moving image theory as they were to classical film theory."[32] According to Rodowick, the virtual life of film will continue in two forms: as information and as art. Film as film, Rodowick suggests, is dead. I will argue differently, proposing that the neuro-image is a continuation of film as film, even if, or indeed precisely because, it can be encountered transmedially. Rodowick's insistence, however, on the importance of film theory's ability to offer up critically relevant tools for understanding the digital turn in contemporary culture will be supported at several instances in this book, with special emphasis on the film-philosophy of Gilles Deleuze. These general aspects and theoretical positions on digital culture serve as my main references and will return in the subsequent chapters. However, the core premise of this book is that in order to really come to terms with what is happening in contemporary audiovisual culture, it is not only film and media theory and (Deleuzian) philosophy that can provide useful insights, but the contemporary neurosciences as well.

Principles of the Brain: Disciplinary Interferences, Rhizomes, and Fractal Patterns

Deleuze proposes extremely rich and fundamental relationships in culture between (continental) philosophy, neurology, and the (film) screen: "There is a special relation between philosophy and neurology. . . . Something that's interested me in cinema is the way in which the screen can work as a brain."[33] I will take Deleuze's suggestion literally and will depart on a transdisciplinary adventure of encounter with recent neuroscience. But before I address specific neuroscientific practices and findings, some general remarks are in order. In *What Is Philosophy?* Deleuze and Guattari foster necessary enthusiasm for disciplinary encounters when they argue