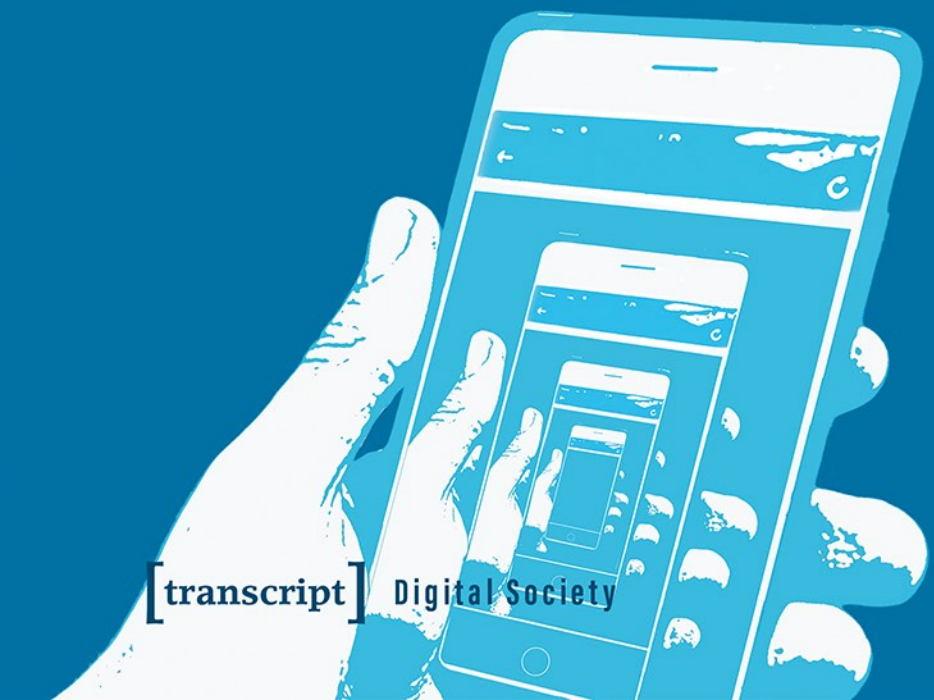
LISA GOTTO

BIG SCREENS, SMALL FORMS

VISUAL VARIETIES IN DIGITAL MEDIA CULTURE



[transcript] Digital Society

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Contents

II. SMALL FORMS

APPENDIX

Introduction

We witness an era with more screens than ever before, and within each screen, a multitude of visual varieties. Our experiences of screen images stretch from the large format screens of 3D cinema to the computer's multiple windows we can click through and resize. We perceive screen images to be all-encompassing when we immerse ourselves in them, or to be fleeting when we quickly scroll through them. More than ever before, we have also become screen image producers: we record videos with our mobile phones, we take selfies and post them online, we participate in TikTok Challenges or create Stories on Instagram, we process film fragments into GIFs or share our game experiences as Let's Play videos. On the one hand, digital screen images are ephemeral, since they are nothing but an accumulation of data deprived of any material basis. On the other hand, they are persistent, since, in their ubiquity, they surround us, affect our perception, and shape our modes of viewing.

This book is dedicated to the diverse image forms and aesthetics driven by digital screen culture. In particular, it explores the relationships between two predominant phenomena of screen technology and practice. These are large image forms, such as those produced by CGI blockbuster films and 3D cinema (Part I: *Big Screens*), and small mobile image forms, such as those found in the smartphone film, selfie photography, or the media practices of Instagram (Part II: *Small Forms*). I consider the media-specific potential of both phenomena as well as their intersections and entanglements as sites of productive exchange. Looking at a variety of screen media in terms of their inherent capabilities of generating visual aesthetics and shaping media practices, I demonstrate that the image forms that emerge from large and small, static and mobile screen arrangements come into being as a complex interplay of technological, sociological, and epistemological factors.

Part I involves an inquiry into the aesthetic character of new image spaces created by digital cinema, specifically in relation to spectacle and sensation,

and to television series in the age of streaming, particularly in their bridging function between large and small forms of digital visual culture. The first chapter ("Fantastic Views: Superheroes, Visual Perception und Digital Perspective") explores the conceptual and stylistic fluidity of the cinematic image in an era marked by the continual pursuit – technologically as well as sociologically—of hyperperception. Positing the figure of the superhero as an aesthetic construction rooted in the evolution of both analog and digital technologies, I demonstrate how these tech-centric superheroes allow us to rethink established notions of cinematic space and viewing positions. Following and fostering aesthetic transformations, the superhero's transmedia existence points to the performative process of generating perception and perspective and to media's contribution to this very process. By analyzing how superheroes look at and move through the complex properties of urban and cyber space, I establish a connection between a contemporary stylistic trend towards visual excess and a heightened social interest in unlimited and unbound supervision.

Chapter 2 ("Attraction, Simulation, Speculation: *The Day After Tomorrow*") considers the digital imaging techniques of CGI spectacle cinema as a form of media reflection. In doing so, I assume that in the age of post-cinema, Hollywood realigns its own image requirements and makes this process visible and recognizable through filmic operations. Using the example of the climate disaster film *The Day After Tomorrow*, I show how the narrative of climate change intertwines with the process of film-aesthetic change, demonstrating that Hollywood can not only associatively invoke the structural transformation to which it itself is subjected, but also reflexively elaborate it—especially when it comes to its own visual digital forms and formations. Central to this is a discussion of the notions of attraction, simulation, and speculation, and how they can be made productive as a post-cinematic field of aesthetic negotiation.

Chapter 3 ("Incorporations: On the Mediality of Arnold Schwarzenegger's Cinematically Built Bodies") provides a reading of the structural and aesthetic excessiveness of cinematic embodiment. Considering Schwarzenegger's body as a medium, I argue that his incorporations enable viewers to reflect on complex concepts such as movement, gender, and technology. By offering mutable visual strategies of display, Schwarzenegger's excessive corporeality becomes a multi-mediated body that produces varying applications of its representational forms. Focusing on the binaries of mobility and immobility, masculinity and femininity, and biology and technology, I demonstrate that Schwarzeneg-

ger's filmic bodies constantly cross the boundaries between these seemingly strict binaries, thus enabling audiences to realize the arbitrariness of all attempts to distinguish clearly between them.

In chapter 4 ("Dimension and Duration: On the Aesthetic Relationship of Space and Time in 3D Cinema"), I outline how 3D cinema creates its own aesthetic form of spatiotemporality. Arguing that the staging of expanded space, which has characterized stereoscopic film since its inception, is connected to a specific understanding of temporal continuity, I explore what aesthetic and narrative possibilities this opens up for 3D cinema. I first analyze the early phase of stereoscopic cinema and the first approaches to a distinct 3D film grammar, then turn to classical cinema and the aesthetic capabilities of three-dimension spatial depth gradation, and finally consider contemporary digital 3D film as an aesthetic reflection of altered perceptive dispositions within digital media culture.

Chapter 5 ("The (Imaginary) Man of (Hollywood) Cinema: An Encounter with Edgar Morin") offers a reading of Edgar Morin's anthropology of cinema and proposes to make his positions fruitful as an approach to investigate phenomena of film-aesthetic fluidity. With Morin, the category of the fluid can be understood as a central media specificity of film, making possible new spatiotemporal movements and modes of perception. I explain how Morin brings together the fluidity of the image and the involvement of cinematic man into this fluid space-time as an integrative reciprocal relationship, and then ask about the connectivity of Morin's cinematic thinking beyond the time of its creation. Here, I propose to consider the visual worlds of digital cinema as a new vanishing point for film-aesthetic fluidity. Digital images explicitly address seeing as a fluid process that can decisively help to understand their aesthetic quality and imaginative potential as a permanent state of transition.

The aesthetics of digital 3D cinema have often been discussed in relation to the special effects of blockbuster films. In chapter 6 ("Back to the Beginning. Wim Wenders' *Pina* and the Spatial Aesthetics of 3D Cinema"), I consider a different approach, namely the question of how 3D cinema can be made aesthetically productive for documentary films. Concentrating on Wim Wenders' *Pina*, I investigate how the intertwining of spatial depth and temporal continuity evokes a sense of reality that extends beyond the representational capability of the flat image. For Wenders, the question of how image space and movement can be brought together to form new modes of perceptual experiences is not a question of a cohesive event but of open play. This becomes especially clear in such moments when the actors are not performing

in specifically designed stage scenarios but act in unstaged, preexisting locations. As Wenders shows, digital 3D films don't have to be direct successors to spectacle cinema. Instead, his approach is directed to the space of our everyday experience that we need to rediscover.

The last two chapters of the first part consider the narrative and aesthetic form of contemporary television series, allowing us to reflect on a newly emerging television style in a period of media convergence. Innovations in production techniques and transformations in digital distribution have enabled TV series to create visual experiences similar to ones that were once only seen in Hollywood movies. As more and more homes install widescreen HD televisions complete with surround sound systems, television is now becoming a medium that seems to rival film for entertainment. In terms of their aesthetic character, television series have the potential to vary and transform visual motifs and image structures by means of serial processes, and, moreover, to unfold this potential as perpetually incomplete, as something that can always be continued. They are therefore not only carriers or mediators, but also drivers of image-aesthetic transformation processes in digital media culture.

Chapter 7 ("Scars and Screens: *Nip/Tuck*") discusses principles of self-optimization in relation to both the human body and serial television. Concentrating on the example of *Nip/Tuck*, I explore how this series presents plastic surgery as an effective means of self-optimization, making it appear as a catalyst for bodily perfection. Significantly, however, the program of self-regulation does not focus on a conclusion but demands perpetual continuation. It is therefore itself already serial: every intervention implies a follow-up intervention, every step in the direction of perfection demands another one. In *Nip/Tuck*, both the body and the image of the body are subjected to a series of optimization procedures, enabling television to reflect on the requirements and foundations of regulating self-production. It is precisely here where the media reflexive potential of the series *Nip/Tuck* is made manifest: it not only depicts the process of perfection but also considers its claims and contradictions as media procedures.

In chapter 8 ("Prescripts and Postscripts: *Mr. Robot*'s Digital Writing Operations"), I consider practices of writing under digital conditions and explore which cultural-technical and media-aesthetic transformations are connected to these practices. Using the series *Mr. Robot*'s preoccupation with hacking culture as thematic through-lines to my reading, I argue that the hacker's disregard for technical standards, regulations, and rules sheds light on a cre-

ative potential that exchanges the abstract world of fictional writing for the concrete situation of auto-operative writing practices. In this sense, the seriality that underlies *Mr. Robot* is a specifically digital seriality: it is based on connectivity and variability, on the constant transformability of shifting relations. This applies to both the writing and reading processes prominently addressed in the series and to the transmedial expansion of televisual narration as a whole.

Following part I (*Big Screens*) with its focus on large image constructions, part II (*Small Forms*) concerns itself with new media cultural practices that generate aesthetic forms and formats of condensation, fragmentation, and brevity. We encounter such phenomena of the small in the context of media-driven popular culture, especially with regard to mobile screens, but also where the marginal and the rudimentary are aesthetically re-valorized. Small formats generate new forms of representability and narrativity through their inherent ability to condense and accelerate medial processes of production and consumption. Time and again, they transcend and transgress conventional forms of visual culture, bringing information and narration, imagery and textuality, ephemerality and preservability into a productive relational structure.

Chapter 9 ("Tipp-Ex: Small Corrections") examines the cultural technique of deletion as well as its technological presumptions and consequences in the digital age. Taking an interactive viral video campaign for Tipp-Ex as an example, I turn to forms and procedures of erasing and overwriting in order to divert the gaze from the completeness of a text and instead look at the structural and material conditions of its production. This involves a shift in perspective from the large to the small and, connected to this, the question of the epistemological function of small corrections as they are induced by erasure media such as Tipp-Ex.

Chapter 10 ("Micro Movies: On the Smartphone Film as Media Miniature") is similarly interested in small forms and formats, turning my considerations of media aesthetic transformations resulting from the small in the direction of filmic forms. Central to my analysis are the practices of mobile filmmaking which generate a new understanding and conception of mobile images. The mobile media practices of the smartphone film are characterized by the fact that they no longer rely on stable or exclusive locations—places of production, editing, and distribution. Rather, their unique quality consists of a specific type of mobility—a mobility of devices, users, processes, and transmissions. Smartphone films are subject to and adapted to the conditions of

mobile screens and mobile viewers. They operate with a short attention span and limited means of production, thereby enabling a newly emerging aesthetic of volatile visuality.

Chapter 11 ("Strike a Pose: Robot Selfies") investigates robotic photographic self-portraiture as a way of android self-monitoring. Dealing with Google's museum robot *Gigapan*, NASA's Mars rover *Curiosity*, Canadian hitchhiking robot *Hitchbot* and the automated, purely techno/self-centered images they produce, I reflect on the embeddedness of the selfie into contexts of self-knowledge within a machine age. The peculiarity of robot selfies, I argue, lies in their aptitude to mediate between self-reflection and self-transformation. Robot selfies exist both as effects and alternative modes of selfie culture, exemplifying a medial reflection that points to the consequences of a transformation of both visual technology and knowledge formation. This process involves not only questions of machinic sensibilities but also, and even more so, an enhanced understanding of the form and function of the selfie as an epistemic technique.

In chapter 12 ("Instagramming: Instagram's Media Practices"), I explore how Instagram's digital networked media practices stand in marked contrast to the practices of analog instant photography. Given the profound transformations that Instagram produces as a mobile image network, I argue for a shift in perspective that considers the modifiability and transformability of the image and its additional operations in the context of digital platforms. Crucial to this is the fact that the use of Instagram is no longer oriented toward an individual, inalterable image but is bound up in the practices and potentials of mobile media engagement. As a social network, Instagram organizes how images are produced, distributed, and received. This includes the fact that in the saving and sharing of an image, the app applies a set of protocols that aim to conform to predefined settings, thereby organizing both aesthetic alignments and medial forms of self-depiction via photographic images. As performative processes of image-making, Instagram's media practices demonstrate what it means to communicate with and through images in a period characterized by mobile screen culture.

Chapter 13 ("Right here, right now. Evolution, Animation, and Music Video) discusses two media theoretical concepts, evolution and animation, and connects them to digital media developments in music videos. Via the example of the music video for Fatboy Slim's "Right here, right now" (Hammer & Tongs, 1999), I demonstrate how the video presents an aesthetic form of expression that not only visualizes a satire of creation history but

also implies a commentary on its own media evolution by means of reflecting on its digital imagery. Relying on the animation technique of morphing, this music video presents a flow of images constantly transforming and modifying themselves. This is where the self-reflexive potential of the digital image proves to be a salient illustration of the model of media evolution. Instead of linear chronology, evolution represents constant change; instead of a rapid break, it points to a gradual development, interdependencies, and relational structures. This enables us to rethink not only key concepts of media history and theory but also to redetect them in the microstructures of music videos.

Chapter 14 ("Types and Bytes: Ludic Seriality and Digital Typography") focuses on the media development of writing techniques and its historically variable practices and procedures. *Type:Rider* (2013), a videogame that both implements the theme of writing's transformation and, by means of its own specific medial properties, drives its progression, serves as an example. As an adventure and puzzle game, *Type:Rider* discovers the history of typography to be a complex configuration. By moving along the historical lines of letters and lettering, the game not only depicts their inherent techniques and aesthetics, but also renders them as evolutionary processes of mediated communication and information. Exploring the ways in which *Type:Rider* plays with mobile typography, I demonstrate that this game elaborates the potential of typing as a cultural technique in a specific manner. As a media practice characterized by ludic seriality, playing with types not only relies on the logics of digital manipulation and flexibility, but also makes them formally visible and recognizable.

In chapter 15 ("Touch/Don't Toch: Visuality, Tactility, and Music Video"), I examine music videos as an aesthetic zone where visuality and tactility encounter one another. With "Black or White" and "Africa Shox" I consider two music videos that not only use digital technology in innovative ways, but also produce remarkable representations of the body, bringing to the fore the visible and touchable surfaces of these bodies, i.e. the skin and the sensory modalities of visuality and tactility associated with it. Presuming that sensory perception adapts itself to new media, forming itself according to their requirements, I bring together the visual and the tactile as a newly emerging media assemblage that becomes observable in experimental media forms like music videos.

The last chapter ("Going in Circles. Rotation and Immersion in Björk's *Wanderlust*") investigates pictorial principles that are no longer aligned with

the rectangular frame, but transcend it and expand it into a circular form. Taking the stereoscopic 3D production of Björk's "Wanderlust" as an example, I consider viewing configurations that give up the logics of vertical and horizontal image structures and replace them with curved lines. Björk's experiments with circular image forms, I argue, point to an expanded media dispositif whose digital image worlds find their vanishing point in an innovative focus on roundness. In the digital age, the rectangular format seems to be increasingly retreating. The more electronic displays and image media penetrate all areas of everyday life, the more elastic the images surrounding us become. Virtuality and immersion, augmented and mixed reality are today displacing the concept of the image as a clearly closed, hermetically framed picture surface. In this sense, the future belongs to unbounded displays, rendering the image ever more flexible and malleable.

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I. BIG SCREENS

Fantastic Views
Superheroes, Visual Perception, and Digital Perspective

As a cultural conglomerate, the superhero genre has always been engaged with transmedia procedures. Since its inception, it has profoundly relied on transmedia storytelling and the ability to expand across multiple media platforms. Ranging across newspaper strips, comic books, radio shows, motion pictures, television series, and video games, the superhero fiction is characterized by narrative extension. Offering a variety of artistic intersections and numerous forms of productive exchange, it allows for acts of adaptation as well as aesthetic transformation. In the digital age, the two-dimensional drawings of comic panels and traditional matte paintings have turned into the three-dimensional sets of CGI and digital cinema as well as the navigable worlds of video games. Hence, the superhero genre not only gives us extraordinary characters who move through the complexity of fantastic worlds but also provides us with a perspective on mutable modes of perception. Exploring a novel valuation of dimensionality, the genre points to the emergence of new spatial sensibilities and viewing capacities.

What makes the superhero genre a particularly comprehensive field for the deployment of perceptual forms and effects is its capability to render vision through the production of supernatural skills. Utilizing a remarkable amount of vision-based powers, the superhero's mode of perception is communicated as a wide-ranging viewing ability. It revolves around night vision, x-ray, and telescope viewing; it makes use of extensive optical facilities, technical intelligence, and sensing equipment. Moving from analog to digital perspectives, the superhero introduces and mediates alternate ways of managing information, in terms of both narration and viewing. As a figure of mutability and transformation, he implicates changes of and challenges to perceptual modes as they have been developed by video games' first-person perspectives or the spatial potential of 3D narratives. Moreover, as the character's abilities

are delivered from mutable viewing positions, they lend themselves to an exploration of optical standpoints. The superhero is a figure that allows us to see through its superhuman eyes; still, at the same time, it is a figure to be looked at. Furthermore, this kind of conception is deeply affected by the ways in which configurations of technology, viewer positioning, media text, and context take shape in specific arrangements and are controlled by particular apparatuses. Thus, as projection and perception are in constant interaction, they influence the condition for each other's presence and thereby constantly transform themselves.

This essay investigates the superhero genre's thematic and aesthetic formations of viewing capacities. I will discuss the superhero genre as a critical space for rethinking assumptions around viewing positions as well as the historical frameworks through which they have been consistently addressed and evaluated. In doing so, three aspects deserve special attention. The first section considers the process of masking, and thus the oscillation between looking at and seeing through a mask; the second discusses the process of mapping, and thus the interrelation of spatial positioning and spatial representation; and the third debates the process of mediation, and thus the vacillation between interaction and immersion.

Following and fostering aesthetic transformations, the superhero's media existence exemplifies a modality capable of reconciling several characteristics of visual technologies. It becomes proficient to point to the performative process of generating perception and perspective, and, what is more, to allude to media's contribution to this very process.

1. Masking

As a figure whose visual capacities exceed those of the human eye, the superhero provides a specific mode of viewing. Being equipped with superhuman visual powers, he does not only enhance his own perceptual abilities but also redirects our gaze to the field of vision. This way of seeing and being seen becomes concentrated and condensed through the mask. "The mask is the perfect synecdoche for the superhero,"[1] states Scott Bukatman, pointing to interrelated visual structures of exposure and disguise. The mask conceals the

1 Scott Bukatman, *Matters of Gravity: Special Effects and Supermen in the 20th Century* (Durham: Duke University Press, 2003), 212.

wearer's true identity and thereby constructs another identity. It brings the unknown to recognition and the unrepresentable to representation. Still, as a costume or cover, the mask is not clandestine but attracts attention: "In their secret identities, superheroes all hide in plain sight."[2] The mask is a means of covering as well as of uncovering. While the masked is seen to be masked, the secret is revealed to be no secret at all. Thus, the mask indicates a presence of absence. It reveals what it hides, and it hides what it reveals.

This status of instability is often put on display by the contours of the mask itself. Many superheroes wear half masks, like Batman or Daredevil for example. Deriving from sixteenth-century mask types of the Italian commedia dell'arte, which for the first time used a half-mask theatrically, this kind of masquerade is a study in contrast. Half masks cover the upper face, leaving the mouth and jaw exposed. Hence the face's immobile upper part is in contrast with its mobile lower part, and the ornamental framing of the eyes is in contrast with the laying bare of the mouth. The half-mask depicts a face that does not exist as a whole but is always already fragmented. In enforcing a concentration of the eyes, however, it requests the viewer to look out for minuscule movements behind the shield. The combination of eyes and mask fascinates because it pairs the mobile with the immobile.[3] As a result, the spectator's view is split up as well, as Paul Coates underlines regarding *The Dark Knight* (Christopher Nolan, 2008): "The recognition therefore seems to be a half-recognition, a seeing in the denied periphery of vision."[4] Thus, the half mask is information conveyed and information withheld. It brings together mobility and immobility as well as stasis and flexibility.

In digital cinema, masking and layering have become defining practices to alter the actor's facial expression: "Whilst analogue cinema features human characters faithfully captured by an analogue camera, digital cinema often involves the modification of these human characters. […] What this means is that the characters that we see on film are a hybrid of 'real' flesh and blood actors and digital imagery."[5] With digital technology, the process of assimila-

2 Ibid., 213.

3 An interesting counterexample is Rorschach's constantly mobile mask in *Watchmen* (Zack Snyder, 2009). Thanks to Matthias Stork for this comment.

4 Paul Coates, *Screening the Face* (Houndmills: Palgrave Macmillan, 2012), 93.

5 William Brown, "Man without a Movie Camera – Movies without Men: Towards a Posthuman Cinema?", in *Film Theory and Contemporary Hollywood Movies*, ed. Warren Buckland (New York: Routledge, 2009), 69.

tion reaches a point of amalgamation. This kind of hybridization has implications for the notion of transformation. Digital imagery raises questions about bodily boundaries and the concepts that are associated with them. While the human is being encased within a second skin of digital technology, his organic face seems to fade into invisibility. The digital superhero emphasizes this structure by erasing the distinctions between face and mask. This becomes most obvious when the half mask is turned into a whole mask, as in the case of Spider-Man. Thus, within cinematic representation, the identity of the performer becomes unimportant; the mask of technology itself is the thing: "The cinematic superhero is becoming the incarnation (ironic word!) of electronic technology; digital beings that embody the fact of being digital. So after Tobey Maguire pulls Spider-Man's mask over his face the figure onscreen literally ceases to be Tobey Maguire."[6] The digital mask does not depend on a face to wear it. It exists as a self-contained feature, ever more light and malleable.

Digital characters have an element of flexibility within them that can be stretched beyond the limitations given by raw material. They allow for a specific kind of transmutation. Andrew Darley analyses this transformation via the example of *The Mask* (Chuck Russell, 1994), a film that exemplifies a specific stylistic transfiguration from classical cartoon to digital cinema:

> Instead of using the computer to simulate live action cinematography, *The Mask* uses it to introduce techniques of graphic exaggeration such as 'squashing and stretching'—aesthetic techniques of the classical two-dimensional cartoon—into the 'three-dimensional photo-reality' of live action film. This produces extraordinary (and paradoxical) imagery whereby corporeality and verisimilitude gets injected into the graphic hyperbole of the cartoon aesthetic.[7]

Developing stylistic choices to make a character seem cartoon-like and preternatural, digital film has often relied on graphic manipulation and exaggeration rather than cinematographic recording. On the other hand, more recent endeavors in digital cinema aspire to achieve seamless photorealism, creating a perfect illusion of the real. Obviously, digital superheroes are presented as

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6 Scott Bukatman, "Secret Identity Politics," in *The Contemporary Comic Book Superhero*, ed. Angela Ndalianis (New York: Routledge, 2009), 115–116.

7 Andrew Darley, *Visual Digital Culture: Surface Play and Spectacle in New Media Genres* (New York: Routledge, 2000), 111.

spectacle, but that spectacle is shown to be both fictional (the concept of superhuman figures as fantastic characters) and nonfictional (the display of enhanced reality created by CGI). These efforts can be considered as a production process that shuttles between venture in artifice and investment in authenticity. The superheroes' world is perceptually realistic—even if, as a nonexistent place, it cannot be an index. Nevertheless, the persuasiveness of digital effects makes indexical claims.[8] Hence digital cinema offers a kind of hyperreal cartoon imagery, a continuum between mimesis and abstraction.

The mask of the superhero is not only a means of disguise; it is also a technological device. In *Iron Man* (Jon Favreau, 2008), protagonist Tony Stark (Robert Downey Jr.) applies a powered exoskeleton when he assumes the identity of Iron Man. The suit has a self-contained environment consisting of various communication arrays and sensors that turn Tony into a technologically enabled superhero. Viewed from the outside, his facial mask consists of a hermetically closed helmet that covers the entire head with a cutout across the eyes. However, the film does not only offer an outside viewpoint on the superhero's appearance. It also changes the perspective to inside the helmet to view all the information presented to the character (see Fig. 1).

Fig. 1: The camera allows us to cross behind the mask to view the superhero's graphical user interface.

8 Frank Kessler emphasizes: "Through a shift in perspective, the 'claim of the real' no longer depends on the indexical image but on the status a viewer ascribes to that discourse." See Frank Kessler, "What you get is what you see. Digital images and the claim on the real," in *Digital Material. Tracing New Media in Everyday Life and Technology*, ed. Marianne van den Boomen et al. (Amsterdam: Amsterdam University Press, 2009), 187.

Additionally, when Iron Man starts his flights, the film inserts several subjective point-of-view shots, allowing us to see the world through the superhero's eyes. The film thus gives us a cyberview perception, shown through a digital display and accompanied by analytical data.

This entering into the inside of the mask provides a critical space for rethinking filmic assumptions around viewing positions. Significantly, the shots depicting the superhero's view through the mask lack a defined frame: we see through a screen without noticing the confines of the screen. This way of rendering space is reflexive because it indicates a specific mode of perception: it duplicates the cinema's screen and its masking action. As André Bazin was among the first to observe, the filmic screen is not the frame of a picture but a mask that produces a centrifugal configuration:

> The outer edges of the screen are not, as the technical jargon would seem to imply, the frame of the film image. They are the edges of a piece of masking that shows only a portion of reality. The picture frame polarizes space inwards. On the contrary, what the screen shows us seems to be part of something prolonged indefinitely into the universe. A frame is centripetal, the screen centrifugal.[9]

Bazin's notion of the cinematic screen as a piece of masking indicates the model of a frameless window, a now well-established concept within film theory. Its central characteristics are transparency and pellucidity: "One looks *through* a window, but one looks *at* a frame. The notion of the window implies that one loses sight of the framing rectangle as it denotes transparency […]. The window directs the viewer to something behind or beyond itself—ideally, the separating glass pane completely vanishes in the act of looking."[10] Having been developed within the framework of film theory, the idea of the unframed window as a specific model for visual perception and perspective proves to be an effective notion for wider discussion, especially with respect to digital technology: "It is the digital revolution itself, and the increasing ubiquity of 'flat' computer monitors as display surfaces, which has advanced the window to the status of a leading cultural metaphor."[11] In the digital age, the screen as a window replaces the frame as a stable construction. We witness an

9 André Bazin, *What is Cinema?* (Berkeley: University of California Press, 2005), 166.

10 Thomas Elsaesser and Malte Hagener, *Film Theory: An Introduction Through the Senses* (New York: Routledge, 2010), 14–15.

11 Ibid., 33–34.

era with more screens than ever before, and within each screen, a multitude of visual varieties. In discussing how a medium refashions other media via the process of remediation, David Jay Bolter and Richard Grusin have shown how immediacy leads to hypermediacy: "Where immediacy suggests a unified visual space, contemporary hypermediacy offers a heterogeneous space, in which representation is conceived of not as a window on to the world, but rather as 'windowed' itself—with windows that open to other representations or other media."[12] In *Iron Man*, the superhero's view through the mask is reminiscent of the cartographic mode of video games. As an intensification of the subjective point of view shot, it shares something of the cinema of the past and the computer game of the present. Its representational mode is not unified but multifaceted. Thus, the window's tendency to transparency opens itself up to the status of virtuality. Anne Friedberg emphasizes: "The window's metaphoric boundary is no longer the singular frame of perspective—as beholders of multiple screen 'windows', we now see the world in spatially and temporally fractured frames, through 'virtual windows' that rely more on the multiple and simultaneous than on the singular and sequential."[13]

In *Iron Man*, this multiplication of viewpoints is rendered visible through the superhero's subjective perspective. Offering multimediated sights as well as multiple layers of information, this visual construction differs ostentatiously from former perspective relations. In *The Language of New Media*, Lev Manovich argues that the digital layering of processes, images, and information enriches visual perception in a complex manner. In contrast to the analog organization of media forms, digital multimedia production adds more and more elements of information without establishing any conceptual tension between them. This pertains to a shift in aesthetics: "Where old media relied on montage, new media substitutes the aesthetics of continuity […]. Montage aims to create visual, stylistic, semantic, and emotional dissonance between different elements. In contrast, compositing aims to blend them into a seamless whole."[14] Thus multilayered new media compositions displace montage

12 Jay David Bolter and Richard Grusin, *Remediation. Understanding New Media* (Cambridge: MIT Press, 2000), 34.

13 Anne Friedberg, *Window Shopping: Cinema and the Postmodern* (Berkeley: University of California Press 2000), 243. For a wider discussion and a far reaching genealogy of the window as metaphor, concept and technology see Anne Friedberg, *The Virtual Window: From Alberti to Microsoft* (Cambridge: MIT Press, 2009).

14 Lev Manovich, *The Language of New Media* (Cambride: MIT Press 2001), 143–144.

as the dominant aesthetic logic, allowing the viewer to watch and see in a fundamentally different, more complex way.

The superhero's mask comes to stand for a head-mounted display. Suggesting technologically enhanced perception, it is closer to machinic than human vision.[15] As a result, the cinematic viewer is challenged to widen his perspective as well. Addressing changes surrounding the concept of the spectator in the digital age, Nicholas Mirzoeff maintains "that audiences were learning to see as computers. That is to say […] we need to learn how the computer sees, to learn how to recognize its gaze and then to imitate it."[16] Making the computer gaze accessible requires a visual enhancement of the filmic image. The camera seems to adopt a computerized visuality complete with specific digital graphics. Alexander Galloway explains: "Necessary for this effect are all the traces of computer image processing: scan lines, data printouts, target crosshairs, the low resolution of video, feedback, and so on. In other words, a deviation from the classical model of representation is necessary via the use of technological manipulation of the image—a technological patina."[17] It is this technological patina, this cyber skin that covers the filmic image like a mask. While we move into the digital domain, new modes of perception alter our way of seeing the world. As this transformation transgresses boundaries between human and machine, the digital superhero's vision is most appropriate to embody that change.

2. Mapping

Being capable of transcending the laws of physics, superheroes move through space in a special way. They explore environments, navigate them, and thereby generate knowledge about space and spatial positioning. This ability to move in and out of a geographic terrain relies fundamentally on optical machines and technologies that organize visual orientation. Many superheroes supplement their powers with special devices like night vision binoculars, infrared

15 On the concept of vision machines as technical prosthesis that alter and extend human perception see Paul Virilio, *The Vision Machine* (Bloomington: Indiana University Press, 1994).

16 Nicholas Mirzoeff, "The Subject of Visual Culture," in *The Visual Culture Reader*, ed. Nicholas Mirzoeff (New York: Routledge, 2002), 11.

17 Alexander R. Galloway, *Gaming: Essays on Algorithmic Culture* (Minneapolis: University of Minnesota Press, 2006), 56.

cameras, or telescopic lenses. Thus, the superhero's vision-based powers can be seen as a reflection of the will to enhance human perception and to extend the boundaries of the visual known—an endeavor that is long rooted in media history: "From the eighteenth to the twentieth centuries, science continually expanded the realm of the visible through measurement, representation, and revelation, using telescopes, microscopes, thermometers, X rays, photography, cinema, and digital modeling."[18] While optical organization and visual investigation became defining factors in the field of perception, they enabled vision to celebrate new triumphs:

> The primacy of the eye […] as the dominant sense organ of the twentieth century is the consequence of a technical revolution that put an enormous apparatus to the service of vision. The rise of the eye is rooted in the fact that all of its aspects (creation, transmission, reception) were supported by analog and digital machines. The triumph of the visual in the twentieth century is the triumph of a techno-vision.[19]

Yet, expanding the realm of the visible depends on the notion of the invisible. In other words, to apprehend new modes of perception is also to acknowledge that which defies easy exploration. As modernism increased visual accessibility, it simultaneously impelled the demand toward an effort of mapping. A space that demonstrates this double bind of expanding and withdrawing, of fullness and absence, is the modern city. "The twentieth century city put new concentrations of information into increasingly rapid circulation, coincident with new modes of perception," underlines Scott Bukatman. However, this development "includes the problem of mapping an urban space that had become so big, complex, and dynamic as to evade easy comprehension."[20] Thus, the city contracted and expanded in disturbing, compelling, and captivating ways: "In fiction, journalism, and cinema, the uncentered city appeared as a dark maze or labyrinth, a site of disappearance and murky invisibilities, a giant trap for the unwary, but it was also a stage for spectacular, kaleidoscopic experience."[21] According to Bukatman, the rise of the superhero as a fictional

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18 Bukatman, *Matters of Gravity*, 115.

19 Peter Weibel, "The World as Interface: Toward the Construction of Context-Controlled Environment Worlds," in *Electronic Culture: Technology and Visual Representation* ed. Timothy Druckery (New York: Aperture, 1996), 339.

20 Bukatman, *Matters of Gravity*, 188.

21 Ibid., 188.

trope is inextricably linked to the extension of urbanized modernism. Thus, the superhero's way of navigating through complex surroundings and multipart environments gives us an example of the mutual implications of visual technology and mapping procedures, both of which were involved in making sense of modernity's propensity toward an experience of location and dislocation.

As a figure of utopian vision, Superman was among the first to provide a superimposed perspective on the city. Superman does not walk through the city; he flies over it, offering not only a bird's-eye view but also the ability of enhanced perception through x-ray vision. No stumbling impedes his movements, no obstruction causes him to hesitate or rest: being able to master the gaze, Superman is a panoramic authority. Thus, Superman conveys spatial negotiation through the principle of the visual sovereign. Being positioned at a considerable distance, Superman's elevated eyes gaze down to oversee the totality of events. Yet, this kind of optical superiority requires the detachment from the city and its internal mazes. Hence, Superman's mode of perception owes much to the logic of traditional mapping. It relies on principles according to which the observer is at distance with the observed.[22] Within this visual paradigm, the viewer is endowed with the capacity to apprehend the whole and to comprehend the relationship of all parts to it. Superman's aerial view implies a remote observer, a spectator who looks while being detached from the looked upon.

Batman offers another trajectory. Whereas Superman's flights over the city aim at perfect pictures of order, Batman descends to the deeper levels of chaos. Hence, Gotham City is suggestive to the point of ambivalence: "The bird's-eye view—Superman's magisterial, panoramic perception—is insufficiently panoptic. Gotham is a city defined more by its underworld. It's a concatenation of hidden spaces, corners, and traps. This city needs to be read, deciphered, made legible."[23] Instead of remaining a distant observer, Batman is obliged to approach the city. He gets involved. Diving into irregular urban forms, he explores space by experiencing it. William Uricchio has shown how this way of mapping points to urban cartography as enacted rather than objected space. While Gotham's geography emerges during actions and move-

22 On the tenet of the detached observer as a visual paradigm of modernity see Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge: MIT Press, 1990).

23 Bukatman, *Matters of Gravity*, 203.

ments, while it arises and develops by the way it is inhabited and used, it points to principles of performativity: "Gotham City stands as an aggregation of the ever-changing events depicted on its rooftops, alleys and streets rather than as a stable and coherent street grid. It stands as an enacted space, a space whose identity and meanings are bound up in the dynamic logics of performance rather than the fixed terrain of material artifact."[24] Consequently, Batman engages not so much in distant contemplation but in active navigation. This involves mobility, experience, and perception as coexistent, codependent, and mutually defining. Shifting from detached orientation to attached decentralization, Batman paves the way for a distinctively dynamic mode of mapping.

This tendency toward spatial practices as performative acts is carried forward by Spider-Man. Scott Bukatman underlines: "Superman's magisterial gaze and Batman's profound urban knowledge were revised by Spiderman's more improvisational, sensational style."[25] This is, first of all, due to a special kind of movement, and accordingly, a different kind of perception: "Superman and Batman are guardians of the urban space, but Spiderman is a trespasser. […] He is, at best, an interloper, making his own path across the spaces controlled by others."[26] Superman and Batman fly; Spider-Man slinks and swings. While the former hover over buildings, the later clings to them. It is this way of keeping close contact that becomes the distinctive criterion of the arachnid superhero: "Spiderman […] is a more tactile hero than Superman or Batman."[27] Tactility is less based on mastery than visuality. While vision is enabled by a distance between the seer and the seen, the sensual modality of touch requires closeness. However, it is not only that the proximity of touch is less controlling than the distancing gaze. It also indicates a particular kind of positioning, a mode of being in the world as a way of sharing the world. Derrick de Kerckhove emphasizes: "The physical sensation of being somewhere specific is a tactile experience, not a visual one. It is environmental, not frontal. It is comprehensive, not exclusive. My point-of-being, instead of distancing me from reality like a point-of-view, becomes my point

24 William Uricchio, "The Batman's Gotham City: Story, Ideology, Performance," in *Comics and the City: Urban Space in Print, Picture, and Sequence*, ed. Jörn Ahrens and Arno Meteling (New York: Continuum, 2010), 131.

25 Bukatman, *Matters of Gravity*, 206–207.

26 Ibid.

27 Ibid.

of entry into sharing the world."[28] Thus, the tactile experience comes to mean not simply contact but rather a profound manner of being in and at the world.

In *Spider-Man* (Sam Raimi, 2002), this manner of being in the world is presented as a movement through a world whose space itself is rendered movable. When Spider-Man crawls alongside the buildings of the city, classical principles of orientation are turned upside down: walls become floors, vertical lines turn into horizontal routes. Hence Spider-Man's ability to stick to surfaces transforms the outside of constructed environments to convert into a terrain of altered accessibility.

Fig. 2: Spider-Man's ability to crawl, stick, and sling across surfaces forces us to reorient ourselves to the construction of urban environments.

However, while the viewer follows Spider-Man's movements, he is not offered a fixed and stable viewing position. Instead, the camera itself performs spider-like movements, allowing the image to express more of Spider-Man's worldview. To achieve this effect, a digital camera system called the spidey-cam was used. Aylish Wood explicates: "The spidey-cam […] is a computer-controlled camera rigged to cables so that it can be swung between buildings or along streets. The controller is able to rotate the camera so as to twist during the recording of a swing, thus achieving the motion of swinging and

28 Derrick de Kerckhove, *The Skin of Culture: Investigating the New Electronic Reality* (London: Kogan Page, 1997), 177.

twisting through the air."[29] In this way, Wood emphasizes, "effects technology goes beyond establishing location to give a more expressive impression of that location."[30]

The expressive quality of digital effects influences spatial orientation and mediation. By swinging and swooping a viewer through a location, computer-controlled spidey-cam shots seem to throw the spectator into the space they produce. These shots diminish distance and increase involvement, shifting from representational regimes of space to performative modes of perception. What is more, as they imply movement in and as progress, they allude to tactile forms of exploration. As Erwin Straus has noticed, a distinct feature of touch is that it examines location progressively and sequentially, not totally and simultaneously, as vision does: "In the world of touch, there is no closed, realized horizon; there are only moments—and thus the urge to move from one moment to the next."[31] As a principle that addresses notions of progress and process instead of unity and entirety, touch points to a new understanding of spatiality. This affects procedures of mapping and navigation as well. In the digital age, the mapping of spatial arrangements turns from immobile grids to alternate systems more responsive to the transient and dynamic character of spatiality. As Nanna Verhoeff has shown, digital mapping as a practice and principle shifts from stable representation to unfurling performativity:

> Representation entails more or less fixed outcomes of creative production processes. […] This would be an insufficient understanding for some contemporary media practices and approaches to these practices that foreground process, mutability, flux, simulation, remediation, notions of becoming, and mobility. These characterize the "pre" to representation—the processes before representation comes into being, in its performativity.[32]

Reflecting on digital modes of movement and spatial perception, digital superheroes call into question the fixed map as a way of seeing and the predetermined tour as a way of traveling. Instead, by pushing territorial limits,

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29 Aylish Wood, *Digital Encounters* (New York: Routledge, 2007), 169.

30 Ibid.

31 Erwin Straus, *The Primary World of Senses: A Vindication of Sensory Experience* (London: Free Press of Glencoe, 1963), 341.

32 Nanna Verhoeff, *Mobile Screens: The Visual Regime of Navigation* (Amsterdam: Amsterdam University Press, 2012), 143.

they point to means of progressive exploration and spatial transmutation. In this way, they open up a dimension much wider than cohesive spatiality.

3. Mediating

Given the variety of his image incarnations as well as the changing structures of their understanding and valuation, the superhero has evolved as a highly ambivalent figure. This ambivalence infiltrates the field of perception as well as the question of perspective. Essentially, superheroes have never been only omnipotent characters with omniscient eyes and inexhaustible visual powers. They do not stand exclusively for "pixilated panopticism"[33] but simultaneously evoke implications of restriction. Exemplifying this ambiguity, the mutant Cyclops in *X-Men* (Bryan Singer, 2000) oscillates between optical force and visual confinement. His digital eyes omit blasts of energy, so he must shield them constantly. Cyclops's one-eyed appearance results from wearing a visor with a single, ruby-quartz lens running eye to eye—an irremovable mask that simultaneously shelters and constrains. Cyclops's optic beam continuously projects whenever his eyes are open and unprotected. So to prevent the destruction of any objects in his field of view, Cyclops is relentlessly obliged to use eyeglasses to contain the devastating rays. Thus, the combining of enhanced natural vision with a limited control over it points to the ambivalent status of visual capacities as media procedures. Given that a medium is that which is situated between different positions as well as that through which something propagates, digital superheroes can be discussed as mediating figures and figures of mediation.

Digital superheroes are rendered as multimediated figures who convey varying applications of their representational forms. Discussing the cross-media dispersal of the superhero, Saige Walton underlines: "Today's media mutation of the superhero [...] occurs at a technological level, by maintaining connections with its Marvel comics past while drawing attention to media reframings, through temporally heightened, filmic, and digital metamorphoses of the superhero."[34] Adapting from graphic comic series, digital cinema an-

33 Mirzoeff, "The Subject of Visual Culture," 11.

34 Saige Walton, "Baroque Mutants in the 21st Century? Rethinking Genre through the Superhero," in *The Contemporary Comic Book Superhero*, ed. Angela Ndalianis (New York: Routledge, 2009), 87.

imates the static iconography of its source to become lifelike movement. As filmic photography, it is sequential in time, but not spatially juxtaposed as comics are. Yet some of the central features of comic art have been transferred to the motion picture. For example, the lingering, contemplating gaze on the superhero is made possible in moments that bring the action to a standstill. In *Batman Begins* (Christopher Nolan, 2005) when Batman stands on a rooftop overlooking Gotham City, the narrative seems to stop and the moving image seems to freeze. Instead of combat and power, the spectator is confronted with a static figure exhibited in an extraordinarily long shot. Batman's immobility is thus displayed in a way that crystallizes his position as a static icon.

New forms of temporality have also evolved with extended uses of slow motion and mutable forms of movement and stillness. In *The Green Hornet* (Michel Gondry, 2011) when Kato fights against a gang of muggers, the camera moves into and around the space of the action. The scene is depicted with an unusual split-time approach where Kato moves at one point in slow motion while his attackers move in normal speed, which is then reversed midshot. A telescoping effect on objects in the environment also forms part of the scene, along with "Kato-vision," in which the character is able to slow time down and size up the threats against him. The ability to traverse the scene and isolate objects while still staying in motion gives the impression of reworking the logic of the comic panel in digital filmic terms. Thus, using the visual effect of bullet time, the scene indicates a specific way of transmitting spatiotemporal configurations from graphic novel to cinema. Costas Constandinides observes: "Bullet time shots splice together static and moving images to create a dynamic sense of unity by erasing the limitations of editing and by effacing the limitations of a comic book's gutter, in the sense that we are given a complete view of the space of the action without different panels or shots offering fragmented perspectives of the fight choreography."[35]

Another way of spatial organization being reminiscent of comic panels occurs in a scene when Chudnofsky sends out a hit on the Green Hornet. In a remarkable moment, the viewer witnesses the transmission of information as the frame keeps on breaking apart to divide itself over and over again. Hence the film points to a central aesthetic principle. While comic panels can be

35 Costas Constandinides, *From Film Adaptation to Post-Celluloid Adaptation: Rethinking the Transition of Popular Narratives and Characters Across Old and New Media* (New York: Continuum, 2010), 83.

used to illustrate linear processes that proceed chronologically, filmic image sections can also be used to diagram complex systems of relations in ways that allow for multiple points of entry or exit, and multiple directions for exploration. Moreover, this proliferation of sights and views is presented as an ongoing transformational process being rendered through the creative use of 3D. As such, it profoundly reconfigures how digital cinema uses depth. In an interview, director Michel Gondry commented on this operation, calling it "cellular division."[36] Significantly, Gondry's term does not refer to the logics of the split screen with its allusions to flatness but instead points to the character of the three-dimensional domain, addressing it as a voluminous unit. Thus the scene presents a complex example of dynamic transition of volume into space, space into volume, of their splicing and coexisting in the process of motion. Pointing to digital cinema's aesthetic possibilities, Constandinides speaks of an arrangement of digital bits rather than narrative beats that underline post-celluloid cinema's ability to reinvent itself through the interaction with other forms. This recurring pattern undoubtedly communicates a new trend, where moments in films challenge the seemingly seamless visual whole through a hyperconscious encoding of visual patterns that are appropriated in a playful manner.[37]

Being embedded in layered spaces and transversing various visual environments, the superhero offers multiple viewing positions. As a figure of hybridity, it has always been informed by aesthetic transformation and transmutation: "Arguably, the superhero genre is one of the most historically hybrid of all, embracing and redeploying conventions derived from other genres as well as other media. […] The inception of the superhero was, in itself, a decidedly intergeneric and transmedia formation."[38] Artistic multiplicity and generic variety lie at the heart of the superhero's creation. In the digital domain, cinematic superheroes respond to a vast expansion of story worlds as well as cultural convergence in audience agency. While digital technology introduces significant changes to the way a viewer experiences space and representation,

36 Steve Weintraub, "Michel Gondry Exclusive Video Interview *The Green Hornet*, plus an Update on his Animated Noam Chomsky Documentary", *Collider.com*, accessed September 14, 2013, http://collider.com/michel-gondry-interview-green-hornet-noam-chomsky/.

37 Costas Constandinides, *From Film Adaptation to Post-Celluloid Adaptation*, 84.

38 Saige Walton, "Baroque Mutants," 88.

it allows for the alteration of film aesthetics and perceptual modes. The current moment of digital transition invokes a productive tension between two key concepts: interaction and immersion. Both have been facilitated and cultivated by specific means of digital visuality. Whereas video games advance participatory principles, turning the viewer to a player, digital 3D enables relinquishment, permitting the spectator to abandon himself to a visually increased illusion. The former stimulates active engagement and asks for creative control; the latter diminishes distance and raises physical involvement.

Fig. 3: Much like comics' panels, filmic image sections relate multiple directions for exploration within the image.

Reshaping the viewer's experience and positioning, these perceptual modes have clearly left their marks in the aesthetic unfolding of cinema. The proliferation of the video game's first-person shooter vision transforms the traditional cinematic point of view, leading it to new modes of navigation and enabling new senses of motion and action.[39] The viewer is no longer

39 On the different devices of visual orientation in cinema and video games and the way they shape and influence each other see Geoff King and Tanya Krzywinska, ed., *ScreenPlay. Cinema/Videogames/Interfaces* (London: Wallflower Press, 2002). For a discussion on the implications of point of view and spatial perspective in computer games as a variation of classical cinema techniques see Jan-Noël Thon, "Perspective in Contemporary Computer Games," in *Point of View, Perspective, and Focalization: Modeling Mediation in Narrative*, ed. Peter Hühn, Wolf Schmid, and Jörg Hühn (Berlin: de Gruyter, 2009), 279–299.

passive but can actually witness a visual surrogate of the user's self. As a digital spectator who is informed by games' aesthetics and game-playing experience, he becomes able to break the boundaries between narrator and character, consumer and creator. In films like *X-Men* or *Iron Man*, the growing understanding of game-based visual form and style is clearly detectable. The cinematic viewer no longer looks at a figure; he looks with it. Moreover, he becomes able to mediate between games' aesthetics and cinema perspectives, user and viewer positioning, and the production of meaning as an interplay between these elements. Involving aspects that indicate interaction, the subjective perspective is used as an artistic allusion to spatial perspective in computer games where the game space is presented from the perceptual position of the player's avatar. Thus, the impression of actual occupancy and agency within the space of the fictional world opens up classical cinema's domain of perspective and positioning.

Immersion as it is offered by digital 3D is associated with the transportation to a virtual world. What is more, 3D not only renders space visible but makes it accessible. Thus, the viewer does not merely look at a picture but shares its space. Involving immediate and tangible aspects of visuality, 3D space is considered to be haptic not optic, meaning it can be both an object of vision and a haptic space as well. With regard to the aesthetics of 3D, exploring modes of proximity opens up the possibility of cinema and of our relationship with cinema as a close connection, rather than as a distant experience of observation. Thomas Elsaesser emphasizes: "As the default value of postpictorial spatial vision and in-depth sensation in the digital age, 3D would be retooling the semantics of embodied perception."[40] Digital 3D superhero films like *The Green Hornet* or *The Amazing Spider-Man* (Marc Webb, 2012) point in the direction of a conscious spatial and direct bodily perception. Producing an atmospheric perspective of disorientation, these films create spaces whose presence provides possibilities for characters in transit, spaces open for exploring and experiencing. Thus, they concentrate on spaces that resist easy mapping and tend to compose images that work against fast orientation. They compel the viewer to move close, yet at the same time, they multiply the points of contact all over the auditorium. These 3D images have the effect of overwhelming vision and spilling into other sense perceptions. Space would then be the effect of a synthesis of points, not a container or ground. It comes

40 Thomas Elsaesser, "The 'Return' of 3D: On Some of the Logics and Genealogies of the Image in the Twenty-First Century," *Critical Inquiry* 39 (Winter 2013), 240.

into being as an effect of relations. In this way, spatiality opens sense, for any location bears the potential to open up new planes, new orientations.

By offering mutable visual strategies of display, the digital superhero embraces multiple perceptual modes including principles of interaction as well as immersion. These principles should not be considered to be exclusive or separate. Instead, they can be brought together to communicate with each other. It is this oscillation brought about by the interplay between interaction and immersion that accounts for the digital superhero's aesthetic prosperity.

Digital superheroes provide us with the means to reflect on the conditions and capacities of digital visuality. As aesthetic figures, they do not only rely on the logics of the digital image, they also make it formally visible. D.N. Rodowick notes: "Having a modular structure composed of discrete elements whose values are highly variable, the powers of the digital image derive from its mutability and susceptibility to transformation and recombination."[41] Considering the superhero's tendency to shape-shifting formlessness as well as the variability of figural transformations it carries with it, digital superheroes might be seen as embodiments of digital media procedures. As such, they allow for aesthetic reconsiderations of what it means to be in pictures.

41 D. N. Rodowick, *The Virtual Life of Film* (Cambridge: Harvard University Press, 2007), 103.

Attraction, Simulation, Speculation
The Day After Tomorrow

The plot of *The Day After Tomorrow* (Roland Emmerich, 2004) can be summed up in a few words: because of a shift in the global climate, the world descends into ice and snow. Roland Emmerich's blockbuster is thus an early example of disaster films that connect their catastrophic scenarios with climate change.[1] Hollywood's historically long-held preference for the catastrophic finds a new target with this shift. With the spectacular staging of ecological disaster, cinema creates a perspective that extends to planetary annihilation: the destruction of the environment is not limited to certain points on the map but given a global dimension. The whole world is at stake, including all of those on and in it.

When it comes to images of the world, one must always ask about their modes of production and conditions of construction.[2] In this respect, Hollywood's questions about the world as a whole are also questions directed toward film itself. These questions become particularly relevant in times of transition and comprehensive change. One striking example of this is the phase of upheaval that marks the transition from cinema to the age of post-cinema. In the following, therefore, the subject of climate catastrophe[3] is of lesser con-

1 Further examples of climate disaster films include: *The Last Winter* (Larry Fessenden, 2006), *The Happening* (M. Night Shyamalan, 2008), *Take Shelter* (Jeff Nichols, 2011), *Snowpiercer* (Bong Joon-ho, 2013), and *Geostorm* (Dean Devlin, 2017).

2 A seminal work on this subject is: *Das Planetarische. Kultur – Technik – Medien im postglobalen Zeitalter*, ed. Ulrike Bergermann, Isabell Otto, and Gabriele Schabacher (Munich: Fink, 2010).

3 Cf. Selmin Kara, "Anthropocenema: Cinema in the Age of Mass Extinctions," in *Post-Cinema: Theorizing 21st-Century Film*, ed. Shane Denson and Julia Heyda (Falmer: Reframe Books, 2016), 753. On the relationship between cinema and climate disaster, see further: Ann E. Kaplan, *Climate Trauma: Foreseeing the Future in Dystopian Film and Fiction*

cern, even though the film in question begins with this premise. Rather, what is more decisive is the fact that with the question of climate change, cinema is also addressing and reflecting on its own image change.[4] In other words: Hollywood can not only associatively invoke the upheaval and change to which it itself is subjected, but also reflexively unfold it—also and especially when it comes to its own image processes.

The following will pursue this argument in three sections. The first section concerns the aesthetic attraction value of *The Day After Tomorrow* as a simultaneous display and concealment of its post-cinematic mode of production; the second deals with the model character of climate simulation as a mobile structural form, and the third discusses speculative processes of negotiation as vacillating image formations to which, on the one hand, the film is exposed, and which it, on the other hand, produces itself. They all converge in the observation that in the age of post-cinema, Hollywood again adjusts its prerequisites of the image and visualizes this process through filmic operations.

1. Attraction

The opening of *The Day After Tomorrow* features a remarkable attraction: the discovery of the digital ice world. At the beginning, the camera traverses the space to explore its full scope. It looks down from above while moving forward or, rather, flying forward. In doing this, the camera does not follow a single figure but covers the space without concentrating on a single object—it is solely focused on the landscape, whose exploration dominates the picture. The camera slowly floats over the Arctic Ocean, glides over ice floes, flies by snow-covered plateaus and icebergs, and finally expands into a broad view of

(New Brunswick: Rutgers University Press, 2016) as well as *Eco Culture: Disaster, Narrative, Discourse*, ed. Robert Bell and Robert Ficociello (Lanham: Lexington, 2018).

4 In this respect, one can assume that the question of a post-cinematic transformation has more to do with a process of adaptation rather than of erasure, as Francesco Casetti notes in light of the reshaping of media environmental conditions: "This diffusion gives movies new trajectories along which to circulate, new formats, new environments in which they can be enjoyed. It allows cinema to continue to live—and not only to survive—as it adapts to a new landscape." Francesco Casetti, "The Relocation of Cinema," in *Post-Cinema: Theorizing 21st-Century Film*, ed. Shane Denson and Julia Leyda (Falmer: Reframe Books, 2016), 571.

an icy Arctic desert. This diversity of movement, however, does not develop as a rapidly rhythmized interplay but as a calm flow, as a constant change of viewing and spatial relationships, as something that only comes into its own in continuity. The flexibility of the views and the mobility of perspective relations are constantly revealed anew. No sooner have we grasped an image than its boundaries expand; no sooner do we think we have comprehended a scene than it presents itself as a provisional one that is replaced by another. The film does not arrange all this in the form of classical montage, that is, as a series of fixed and clearly delimitable shots in which one element follows another. Rather, the transitions are always already contained in the image itself, in order to unfold there as a processual movement.

Drawing on Tom Gunning's influential definition of "cinema of attraction," Wanda Strauven explains: "The spectacular dimension of attraction grounds itself on the literal and physical sense of the term, namely 'the force that draws or sucks in.'"[5] Here in relation to cinematic imagery, this refers to spectacular effects that weaken the function of the narration or become completely detached from it. The attraction is neither beholden to the narrative nor subordinate to it but stands entirely for itself. Its goal is to sensually overwhelm the viewers, stimulate their pleasure in looking, and expose this stimulus.[6] Just as well, the expensively produced presentation of the artificial ice world in *The Day After Tomorrow* works with the attraction of showing but does not design it as an eruptive surprise or a singular moment of overwhelming but as a kind of show exercise for digital image processes.

At first, what is so remarkable about this continuously flowing opening sequence is the fact that it looks like one long shot, that is, without any visible cuts. In the age of post-cinema, this formal principle, however, is not

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5 Wanda Strauven, "Introduction to an Attractive Concept," in *The Cinema of Attractions Reloaded*, ed. Wanda Strauven (Amsterdam: Amsterdam University Press, 2006), 18.

6 This aspect was repeatedly taken up in the debate on postclassical cinema and related to the attraction values of digital special effects. See Andrew Darley, *Visual Digital Culture: Surface Play and Spectacle in New Media Genres* (New York: Routledge, 2000); Scott Bukatman, *Matters of Gravity, Special Effects and Supermen in the 20th Century* (Durham: Duke University Press, 2003); Dick Tomasovic, "The Hollywood Cobweb: New Laws of Attraction," in *The Cinema of Attractions Reloaded*, ed. Wanda Strauven, 309–320 (Amsterdam: Amsterdam University Press, 2006); Kristen Whissel, *Spectacular Digital Effects: CGI and Contemporary Cinema* (Durham: Duke University Press, 2014); Julie Turnock, *Plastic Reality: Special Effects, Technology, and the Emergence of 1970s Blockbuster Aesthetics* (New York: Columbia University Press, 2015).

some stylistic outlier but has become an aesthetic convention. Whereas the sequence shot had once been an unusual deviation from the dominating logic of editing in analog cinema, long, uncut scenes are now far more widespread and recognizable as part of new visual dispositifs. Thus, the expansion of storage capacities as a result of digitalization is providing for the potential extension of recording lengths in films. Recording length is no longer limited by the material nature of the analog equipment but is extended, an extension that also yields new aesthetic formations: "Just as the cuts in classical cinema were motivated, in part, by the limits of how long filming could continue before the camera needed to be reloaded, the cuts in digital and HD cinema will evolve into a new grammar at least partially motivated by the fact, that, literally, a film can be shot in one take with no cuts."[7] In fact, the average smartphone user today can effortlessly implement this principle. The numerous uncut films found on YouTube, Facebook, Instagram, and other digital platforms show that the "long take," as an aesthetic phenomenon, has since become an obvious pattern of filmic production and reception. Another process that integrates the uncut visual experience into the experiential world of media is being driven by digital computer games. Their aesthetic focuses not on fragmented viewing arrangements but arises from the uninterrupted movement through the three-dimensional space, as Lev Manovich notes: "Many computer games also obey the aesthetics of continuity in that, in cinematic terms, they are single-takes. They have no cuts. From beginning to end, they present a single, continuous trajectory, through 3D space."[8] Guided and inspired by new image forms and visual experiences, cinema in the digital age does not remain what or how it once was. Under the influence of a comprehensive reorganization of perspectival understandings and viewing conditions through various media, it is rethinking its aesthetic possibilities and is thereby reformulating its methods of narration and expression. The long, uncut sequence that the Hollywood film *The Day After Tomorrow* so prominently places at its beginning can thus initially be read as a cinematographic form of adaptation of the spatiotemporal continuity and fluidity made possible and driven by digital media culture.

The characteristics of the visual appeal of a seemingly uncut digital sequence include the simultaneous concealing and displaying of the mechanisms that keep it going, as Dominik Maeder points out in the example of

7 Nicholas Rombes, *Cinema in the Digital Age* (London: Wallflower Press, 2009), 39.

8 Lev Manovich, *The Language of New Media* (Cambridge: MIT Press, 2001), 142–143.

Birdman or (The Unexpected Virtue of Ignorance) (Alejandro González Iñárritu, 2014)[9]: "Because we see that we do not see the cuts. The invisible is actually the visual's new attraction-driven value in the age of post-cinema."[10] This certainly also applies to *The Day After Tomorrow* but with far greater intensity. On the one hand, here too, the "post-production becomes a special effect at the point where it suppresses every effect of editing."[11] On the other hand, the gliding and flowing, which creates the impression of uninterrupted continuity, is also simultaneously combined and confronted with a significant superimposition, namely the overlay of the opening credits. Here, it is striking that the typeface does not stand out from the film like an interruption but that it is modeled into the visuality of the icy landscape. The script does not precede or follow the picture but merges into it. It does not scroll down from the top of the picture, nor does it appear as an even or uniform fade-in or fade-out, but it changes in a way that also changes the landscape. Thus, the first credits appear as a white script reflected in the deep blue of the water. The script does not appear flat on the screen but seems to float between the camera and the region being filmed: it does not appear to have two, but three, dimensions. Thus, this effect creates the impression that the script does not lie on top of the landscape but, rather, molds itself into it. This also becomes clear by the fact that it subjects itself to the conditions of the landscape and adapts to them. If the substrate is dark, the script becomes white; if the substrate is white, the script becomes dark. These patterns are complemented by the various aggregate states of the water shown onscreen: thus, the moving, flowing ocean water at the beginning provides the basis for the reflection of the script, whose reflection itself begins to move; and in this way, the solid state of the frozen water as ice and snow creates a substrate that appears far more even and also makes the script once again appear flatter. Furthermore,

9 In addition to this example, numerous other films can be named that use the long take as a preferred stylistic device, such as: *The Royal Tenenbaums* (Wes Anderson, 2002), *Panic Room* (David Fincher, 2002), *Minority Report* (Steven Spielberg, 2002), *Irréversible* (Gaspar Noé, 2002) *Elephant* (Gus Van Sant, 2003), *Oldboy* (Park Chan-wook, 2003), *Children of Men* (Alfonso Cuarón, 2006), *Gravity* (Alfonso Cuarón, 2013), or also the opening sequence of *Spectre* (Sam Mendes, 2015).

10 Dominik Maeder, "Birdman or (The Unexpected Virtue of Ignorance) (2014)," in *Filmische Moderne. 60 Fragmente*, ed. Oliver Fahle, Lisa Gotto, and Britta Neitzel (Bielefeld: transcript, 2019), 426.

11 Ibid.

the script is affected by the lighting conditions, which both persist in and emanate from the landscape. When, for example, the sun shines through from the right side of the frame, it also shines on the right end of the script overlay, which is thus illuminated at the corresponding angle.

Nevertheless, script is not part of the landscape but, rather, created by it, since it not only involves what one can see but also its presuppositions and the conditions of its manifestation. It is, therefore, not just embedded into the picture but into the process of de*piction* itself. This is already clear from the fact that the credits change with the orientation of the camera (in other words, the change of its positions and perspectives, such as when the camera is tilted). And ultimately, the function of the credits (the reason that they are there in the first place) moves within its own field of ambivalence. The beginning of the film is the beginning of a story the film is narrating and, at the same time, a reference to its own history. For by listing the film's credits, the opening titles tell the history of the film's production. The opening titles are thus not part of the fictional narrative of the film, although they introduce it or open the floodgates for it. The film announces that it is about to develop something—and it also communicates the conditions of this development. Here, it is the conditions of a digitally produced development that are particularly apparent, partly through the information contained in the credits (such as the announcement of the attraction of visual effects), but also through the effects themselves contained in the image that announces them. In the age of post-cinema, these elements are no longer meant to be separated. They are an entire complex that on the one hand makes itself inconspicuous-invisible and on the other hand displays itself as something artificially created.[12] In this simultaneity of the non-simultaneous, in the continuity of discontinuity, lies the new attraction quality of post-cinema.

12 Stressing this aspect, Angela Ndalianis points out: "Spectators are placed in an ambiguous relationship with the screen in that they are invited to be both immersed in and to understand the illusion (the magic) as a reality, and in the methods used to construct that illusion that ruptures its reality. […] The technology must be both disguised and visible." Cf. Angela Ndalianis, "Special Effects, Morphing Magic, and the 1990s Cinema of Attraction," in *Meta Morphing: Visual Transformation and the Culture of Quick-Change*, ed. Vivian Sobchack (Minneapolis: University of Minnesota Press, 2000), 262. See also in detail: Angela Ndalianis, *Neo-Baroque Aesthetics and Contemporary Entertainment* (Cambridge: MIT Press, 2004).

2. Simulation

What the opening sequence of *The Day After Tomorrow* presents as an attraction loaded with special effects is further intensified and reflected upon throughout the film because the computer-generated icy landscape is not only posited here as a product but also as a process. In other words: we see both the result and the construction principles of a model that has no reference in reality but is produced completely artificially.

The most salient example of this production process is the computer-generated climate model. The film is almost obsessively concerned with this image form, which it repeatedly brings into focus. Here, one can see simple graphical forms, such as progress curves of already collected data, but also moving, three-dimensional simulations that attempt to visualize the movements of the world's climate before they take place. The landscape's breadth and immeasurability are shown here as something that can be calculated, at least in the sense of the calculability of an image-producing process. Not only is the land mapped cartographically, but also the process of its change is made visually accessible. With this, a particular visualization technique is presented—and, with it, its own operation of acquisition and measurement of the landscape. Occasionally, the film puts it in the foreground so much so that everything else is lost from view, such as in a shot where the model loses its frame. The moment the edges of the computer disappear, the image of the computer screen fills up the movie screen: it seems to expand into the realm of the filmic image and cover it like a coating. Remarkably, however, the film confronts this image soon after with its reverse side, i.e. with the view of the CGI ice storm that turns the world into an icy wilderness within the film's narrative. It almost looks like the "Making Of" has become part of the main film: the view of the two-dimensional model on the computer (as a design grid) is followed by the fully animated three-dimensional graphic (as a VFX result).

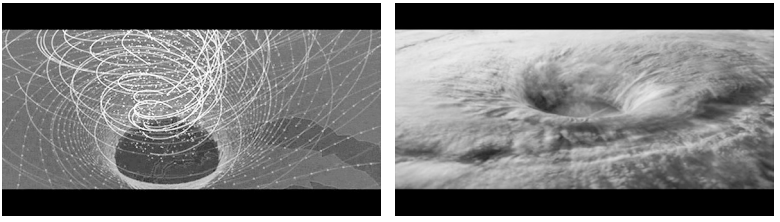

Fig. 4: The model on the computer is followed by a fully animated image of the icestorm.

In his engagement with the characteristics of post-cinema, Richard Grusin describes a transformation process that he identifies as an aestheticization of the animate. According to this approach, digital cinema is characterized by a softening of the dividing line between the static and the kinetic, and between the animated and the non-animated: "The digital cinema of interactions entails what I think of as an aesthetic of the animate, in which spectators or users feel or act as if the inanimate is animate, in which we simultaneously know that the mediated or the programmed are inanimate even while we behave as if they were animate."[13]

If it is true that the aesthetics of digital cinema are connected with a new economy of animation, then the visualization process of computer simulation plays a special role in this. In *The Day After Tomorrow*, this process is particularly noticeable when it comes to the representability of climate data, or more precisely: of their media-specific presentation, interpretation, and narration. In the process, the film, as a type of historical "review," first features analog methods of data preparation. These include large-format diagrams and maps on paper that are rolled up and out, spread out across tables, or hung up on walls. In a further step, the prepared data are presented on computer

13 Richard Grusin, "DVDs, Videogames, and the Cinema of Interactions," in *Post Cinema: Theorizing 21st-Century Film*, ed. Shane Denson and Julia Leyda (Falmer: Reframe Books, 2016), 68. Vivian Sobchack argues in a similar direction: "Although photographically verisimilar, the motion picture fragments, reorders, and synthesizes time and space as animation in a completely new 'cinematic' mode that finds no necessity in the objective teleo-logic of realism." Cf. Vivian Sobchack, "The Scene of the Screen: Envisioning Photographic, Cinematic, and Electronic 'Presence,'" in *Post Cinema: Theorizing 21st-Century Film*, ed. Shane Denson and Julia Leyda (Falmer: Reframe Books, 2016), 102.

monitors, again initially in still forms, i.e. mainly in static graph shapes as lists of figures and measurements. A unique dynamic, however, acquires the processing of data only at the very moment when it appears as an animated simulation. The characteristics of these computer-generated image processes essentially include a time-based factor, from which the illusion of fluid movement emerges, as Barbara Flückiger clarifies: "Computer simulations usually contain a dynamic, temporal component. Thus, the majority of them are rule-based reproductions of processes. For this reason, their results are often presented in the form of animations."[14]

It is this movement and mobility that grants the climate images a unique status, for their aesthetic mobility is connected to symbolic flexibility: the climate simulation indicates change, but at the same time provides a plurality of derivation possibilities. Furthermore, the conditions under which the climate simulation is constructed are, for their part, highly movable. As Claus Pias has pointed out, this has to do with "the fact that phenomena are simulated which are analytically (and also experimentally) difficult or even impossible to access (as is well known, validation is carried out using historical data of climate and weather history, which are incomplete and inhomogeneous). In any case, the adequacy of a single model cannot be proven, only demonstrated."[15] With this, the climate simulation moves into the realm of the fictional; at least, it is closer to this realm than that of the documentary. This can also be seen in the fact that its forms of representation are strongly informed by the vocabulary of fiction, such as when models are called "story lines" or future developments "scenarios." The narrative character of the climate simulation thus makes a central contribution to the mediation of the abstract, and even more: as a medial translation process, it makes it possible for data collection to become a visualization that is able to connect. Birgit Schneider notes: "The cultural achievement of visualization, in the case of the climate curve, is to provide a process of metamorphosis from an order of data and measurements into an order of images, preceded by a whole chain of additional translations and decisions. In the case of climate visualizations, the

14 Barbara Flückiger, *Visual Effects. Filmbilder aus dem Computer* (Marburg: Schüren, 2006), 279.

15 Claus Pias, "Klimasimulation," in *2°. Das Wetter, der Mensch und sein Klima*, ed. Petra Lutz and Thomas Macho (Göttingen: Wallstein, 2008), 114.

results are nothing less than 'world images.'"[16] In Hollywood, these types of "world images" are translated into a new type of image. The computer-generated visualization processes of cinema are genuinely new formations, i.e. they are less about the reproduction of already existing models, but more about an interrogation of their possibilities and limitations, as well as an aesthetic surpassing of the knowledge they offer. Birgit Schneider has demonstrated that in the history of research, "climate and climate change, as well as their causes […], could only be recognized, constructed and reified as research objects by means of visualization."[17] Schneider points out the fact that conventionalized forms of representation, such as infographics, were capable "only of evoking an extremely poor sensory fascination."[18] Hollywood knows how to fill the gap created by the non-experientiality of abstract visualizations of data with virtual sets of images that substitute what can only be conceived of abstractly with concrete forms of staging. As a result, Hollywood images gain their own credential status by charging the void of the unrepresentable with computer-generated simulations, which in turn feedback into the question of climate simulation.[19] Thus, for example, the documentary *An Inconvenient Truth* (Davis Guggenheim, 2006) solved the problem of the non-existent documentary image material of the melting polar ice caps by using the computer-generated opening sequence of *The Day After Tomorrow*: what is shown in the documentary as supposedly real footage of disappearing glaciers in Antarctica is nothing less than a product of the special effects laboratories of Hollywood.[20]

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16 Birgit Schneider, "Ein Darstellungsproblem des klimatischen Wandels? Zur Analyse und Kritik wissenschaftlicher Expertenbilder und ihrer Grenzen," *kritische berichte* 3 (2010): 86. On the status of climate visualization as epistemic image, see further: Birgit Schneider, *Klimabilder. Eine Genealogie globaler Bildpolitiken von Klima und Klimawandel* (Berlin: Matthes und Seitz, 2018).

17 Schneider, "Ein Darstellungsproblem des klimatischen Wandels," 86.

18 Ibid., 84.

19 Elena Esposito has pointed out that the form of the "what if" does not leave reality unaffected. For, ultimately, "the orientation toward a fictional reality [is] part of the real reality. It is a factor that determines its future development." Cf. Elena Esposito, *Die Fiktion der wahrscheinlichen Realität* (Frankfurt am Main: Suhrkamp, 2007), 38.

20 Notably, however, there was hardly any controversy when it was discovered that the documentary used artificially produced Hollywood images as proof for climate change actually occurring—at least not in Hollywood. When asked about this obvious case of plagiarism in an interview for ABC News, visual effects supervisor for *The Day After Tomorrow*, Karen E. Goulekas, stated: "Yeah, that's our shot. That's a fully computer generated shot. There's nothing real in there. […] That was one hell of a shot. I think it's

Hollywood's simulations do not aim at reproducing what is already there or exactly given. Instead, they are oriented towards the artificially created as an extensible set of rules. This is also and especially true for the rule-based generation of computer simulations. In the case of *The Day After Tomorrow*, simulations were used and processed as factors of image composition. This applies, for example, to the digitally produced 3D environment, the particle animations, and the simulations of fluid and snow associated with them. The inherent media dynamics of the particle animations used here lie in the fact that they are system-based, i.e. they behave according to fixed rules. As procedural animations, they are no longer subjected to individual interventions but, rather, to the control of the program. Barbara Flückiger describes the resulting "frictions between the automatisms of simulation and the goals of cinematic representation"[21] as follows: "This tension between artistic intention and rule-based mechanisms characterizes the whole field of procedural systems. It is always a matter of making the most of the complexity offered by the system, but reshaping it to fit aesthetic and narrative goals."[22]

The achievement of Hollywood images lies in the fact that they align their simulations with aesthetic requirements. This is precisely where their productive character is to be found: they do not conceive of themselves as the reproduction of the already existing or as the recreation of a given schema. Rather, they work to remodel complex systems. Instead of invariably implementing the rules, Hollywood chooses to aesthetically appropriate the system and, thereby, to stretch and bend its rules.

3. Speculation

The Day After Tomorrow creates its own terrain of speculation. This first applies to its subject, namely the narrative of a possible climate catastrophe but, furthermore, also to its film-aesthetic staging procedures and its image-technological framework, that is, to the question of what digital images are and what they could become in the future. The film, however, does not just let both of these levels of speculation run side-by-side but presents them as

great that he used it." Cf. ABC News, "Al Gore Plagiarizes Clip from Hollywood Movie," YouTube Video, 1:17, April 30, 2008, https://www.youtube. com/watch?v=SnvJDwv3Z-w.

21 Flückiger, *Visual Effects*, 143.

22 Ibid., 144.

different aspects of one and the same exploration. This is precisely the speculative profit that *The Day After Tomorrow* holds out as a form of reflection on post-cinema.

On the level of the narrative, speculation unfolds first as a continual balancing act between competing forms of knowledge. Having returned from his Antarctic expedition, the climatologist Jack Hall presents his research at a UN climate conference in New Delhi, where the US Vice President is also present. While the researcher explains that the Gulf Stream could drastically cool due to the melting polar ice caps and, as a result, initiate a new ice age, the politician ignores the warnings of an imminent climate catastrophe and instead points out the instability of world markets (i.e. a related field of speculation). Here, speculation appears as a medium of openness, in which insecurity about what is and will be takes on both a narrative and aesthetic form. Even more so: with the example of infographics, charts, and graphs, we can see how speculation is manifested and materialized as a media technology. As a result, a type of knowledge production is developed that connects specialized prognostic methods with interpretive gestures. This can be seen very well, for example, in the combination of climate world maps with researchers and politicians commenting on them. Significantly, their explanations focus less on meteorological details and more on narrative mechanisms that lend the climate situation a special dramaturgy. This results in a mixing ratio of information dissemination, knowledge production, and image modulation. As prognostic methods, data visualizations drive speculation while at the same time attempting to repress interpretative insecurities through image-based forms of representation. However, the extent to which not only the climate but also the image processes serving its visualization are affected by instabilities becomes apparent a little later. In order to more exactly depict the expectations of future developments, the climatologist works together with a NASA meteorologist on an enlarged model, a global climate simulation. But what at first looks like an expansion of visual possibilities also always already holds the danger of limiting the view. Accordingly, the film does not only show the work on the model but also its collapse. Shortly before the model can bring its simulations to a complete view of a worldwide icy landscape, it breaks down. The computing capacity is too small to process the masses of data—the system has lost its capacity for visualization.

This oscillation between breakdown and collapse is the film's pivotal point, causing and propelling a specific form of pictorial reflection. This is not solely due to the fact that a global topic (climate change) is being negotiated by

global cinema (Hollywood) but has much more to do with how this takes place as an image-technical process and how this negotiation asserts itself as a post-cinematographic type of reflection. Effectively, the synthetic snowy landscape is even a particularly apt experimental space for this speculative operation. What distinguishes the snow in its motif-like quality—its unsolid form, its amorphic characteristics—is reflected through the conditions of what it makes appear. If the snow refers to something that can take on and then shed all forms, then this always affects the image processes of the film itself. This involves the interplay of limitation and delimitation, of concretion and abstraction, of constructing and dissolving forms—and, ultimately, the interrelationship of the sharpening and blurring of vision.

This can be seen in various examples. The opening sequence presents numerous possibilities for the creation of the perceptual sense of space, in particular, the transformability of the image space through virtual camera movement, lighting, and shifts in focus. While the film runs through all of these possibilities at its start, it then retreats from the illusion of spatial depth throughout the rest of its duration. There are images that appear to be completely flat and exclude any possibility of orientation. This loss of orientation occurs gradually. In some shots, it is initially still possible to distinguish between the foreground and background of the image—for example, in the shots of the weather station, which is gradually covered in snow. The more the snow spreads, however, the more the building seems to blend into the formless surroundings, finally disappearing into them. More and more, a diffuse, obscure blue stretches across the screen, letting it sink into haziness and opacity. Now, at best, some vague remnants of what previously structured the image can be discerned. All points of reference are swallowed up: above and below, right and left can no longer be distinguished from one another. One could rotate the image any which way—and still see the same thing. The whole thing looks like a freeze-frame, although this is not really the case, because the moving image continues to run uninterruptedly. Nevertheless, the film seems to stand still for a brief moment. Here, nothing seems to progress: the ordering power of orientation seems to be called into question, and the image seems to have surrendered to a total lack of directionality.

Furthermore, the film also shows the transition from an open to a closed view in those filmic methods that make it possible to take in the entire landscape at first but then increasingly forfeit this possibility. One example of this is the view through the car window. This view is a moving one, or more precisely, one that is set in motion by the vehicle's movement. Initially, we see this

process in its classical arrangement, whereby we can also see elements clouding the view (such as the sleet that impedes the unobstructed view through the window). Subsequently, this possibility of viewing the landscape is pushed to its limit. Within the snowstorm, the view to the outside loses its coordinates: it is subjected to an impenetrable white that remains unchanged even by movement. Now, panoramic vision is suspended; now, our view through the windshield is no longer a view into the depths but merely the view of what can no longer be seen in its entirety. This reduced vision is not only related to the extremely limited movement of the vehicle, but also to the fact that the car itself is constantly exposed to heavy snowfall. For example, the snow that has accumulated on the top of the car often slides down onto the windshield, reducing the field of vision and revealing only oddly shifted views. The passengers in the car lose their far-sightedness, which once again brings the problems of perspectival image orientation to light.

In *The Day After Tomorrow*, the interrelationship of form construction and form dissolution is expanded into a continuous process of turnover. Here, the point of condensation is the "blue screen," which is less a general motif of coldness, but rather the medial condition of the snowy landscape itself. We have already seen the blue screen in the images of the snowdrifts. However, it can be reconsidered when detached from the diegesis. One on the hand, it refers to the blue screen technique, a process that makes it possible to combine objects or people with different background images.[23] On the other hand, however, the blue screen is also known as the opposite of creation, namely the collapse of visualization possibilities, at least when dealing with Microsoft Windows operating systems. There, it can happen that every window suddenly disappears, in other words, that the system crashes. This crash is then followed by an error message, known colloquially by the name "BSoD" or "Blue Screen of Death." The OS's user interface is then completely replaced with a blue screen, with error information appearing in a white script.

In the blue screen, both generative and destructive forces are combined; here, something can be made to appear or disappear. This relationship reaches back into the studio or computational space from which it emerged, but it still has an even further reach. In the post-cinematic age, new film images and

23 To accomplish this, the object or person is filmed before a blue background. In order to then crop the object, a matte is used, which defines the visible and invisible areas of the image. Finally, the background film and the cropped foreground film are combined to create new image landscapes.

modes of perception arise—new technologies of production and reception to which cinema has to adapt. In this sense, cinema itself is bound up in a speculative process of transformation that, for its part, requires speculative explorations, as Shane Denson and Julia Leyda explain: "The speculative thinking demanded by such a situation is intimately tied to the notion of post-cinema as an ongoing, non-teleologically determined transition, in the very midst of which we find ourselves."[24] Elsewhere, Denson speaks of "the new speculative quality of post-cinema,"[25] a speculative capability that concerns cinema's fundamental openness to its own issues of negotiation. He then proposes "to see post-cinema neither in terms of everything that follows the invention of cinema […] nor as something that follows the demise of cinema […] but as a potential or speculative possibility inherent in cinema itself."[26]

The speculative field of post-cinema stands, on the one hand, for the obliteration of cinema as we know it (loss of indexicality, transformation of the dispositif) and, on the other hand, for the creation of new image spaces that are not yet known to us (digitally processed and microtemporally generated image forms that are, as it were, below our threshold of perception, i.e. "post-perceptual"[27]). *The Day After Tomorrow* presents the aesthetic questions connected to these changes like a speculative test run. Its questions revolve around the relationship of form and solidity, of constructing and dismantling, of pattern formation and pattern loss. They are questions that stand for turnover and turnaround, for the uncertain and the unfinished. In this way, Hollywood cinema not only follows a comprehensive transformation of itself but also makes it conscious and recognizable. In a speculative sense, this means that *The Day After Tomorrow* points far beyond the medial realm of experience of its time of origin. This film is not about marking a fixed frame of reference, but about transgressing it. For it is only by refraining from a clearly constituted mediality that one can foresee its reshaping and expansion.

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24 Shane Denson and Julia Leyda, "Perspectives on Post-Cinema: An Introduction," in *Post-Cinema: Theorizing the 21st-Century Film*, ed. Shane Denson and Julia Leyda (Falmer: Reframe Books, 2016), 6.

25 Shane Denson, "Speculation, Transition, and the Passing of Post-Cinema," *Cinéma & Cie* 14, no. 26–27 (2016): 28.

26 Ibid.

27 Ibid., 22.

Incorporations
On the Mediality of Arnold Schwarzenegger's Cinematically Built Bodies

1. Introduction

Considering Schwarzenegger's massive physical presence on screen, critical debates on his rise to stardom point to the growing importance of masculinity as a field of investigation in film and media studies. Following Laura Mulvey's famous essay "Visual Pleasure and Narrative Cinema"[1], traditional concepts of gender in screen theory have concentrated on psychoanalytical models and methods. Relying on the theories of Sigmund Freud and Jacques Lacan, Mulvey's account postulates that the camera in classical Hollywood movies regulates the audience's view in an inevitable way. The result is an active/passive binary mapped on masculine and feminine subject positions: Whereas the male looks, the female is looked upon. Steve Neale's "Masculinity as Spectacle"[2] has been almost as influential. In reconsidering Mulvey's paradigm to open up a space for the analysis of screen masculinities as well as gendered spectatorship, Neale argued that while it was true that Hollywood's cinematographic conventions worked to represent women in the way Mulvey had described, male stars in Hollywood were also carefully constructed and screened in objectifying ways. In recent years, several studies on masculinities in film have been published, indicating a new awareness of the visibility of the male body in popular culture. Among them are Kaja Silverman's *Male Subjectivity at*

1 Laura Mulvey, "Visual Pleasure and Narrative Cinema," *Screen* 16.3 (1975): 6–18.

2 Steve Neale, "Masculinity as Spectacle; Reflections on Men and Mainstream Cinema," *Screen* 24.6 (1983): 2–17.

the Margins[3], Yvonne Tasker's *Spectacular Bodies*[4], and Susan Jeffords' *Hard Bodies*[5], as well as the collections *Screening the Male*, edited by Cohan and Hark[6] and *You Tarzan. Masculinity, Movies and Men*, edited by Kirkham and Thumim[7].

While the tradition of examining bodies in film concentrates on cinematic representations as gendered forms of producing and looking, I intend to take a different approach to some of the issues involved. As a cultural conglomerate, Arnold Schwarzenegger provokes multiple meanings. Given the variety of his image incarnations, as well as the changing structures of their understanding and valuation, Schwarzenegger has evolved as a highly ambivalent figure. Like all cultural forms, this figure does not exist in a vacuum. It relies on conditions that make it possible. Retracing these conditions, this essay proposes to examine the variability of Schwarzenegger's filmic embodiments as media procedures. Thus, it does not attempt to analyze Arnold Schwarzenegger's representation in film, but instead aims to outline the very process of filmic incorporation as dependent upon media logics. Given that a medium is that which is situated between different positions as well as that through which something propagates, Schwarzenegger himself might be discussed as a medium. Following this thought along three sites of exchange, I will try to connect distinct stages of Schwarzenegger's career with varied ways of mediating. All of them are concerned with movements around the middle of a scale of evaluation. The first section considers the built body, and thus the oscillation between mobility and immobility; the second debates the gendered body, and thus the vacillation between masculinity and femininity, and the third looks at the mechanized body, and thus the interrelation between biology and technology.

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3 Kaja Silverman, *Male Subjectivity at the Margins* (New York: Routledge, 1992).

4 Yvonne Tasker, *Spectacular Bodies: Gender, Genre and the Action Cinema* (London: Routledge, 1993).

5 Susan Jeffords, *Hard Bodies. Hollywood Masculinity in the Reagan Era* (New Brunswick: Rutgers University Press, 1994).

6 Steven Cohan and Ina Rae Hark, eds, *Screening the Male. Exploring Masculinites in Hollywood Cinema* (New York: Routledge, 1993).

7 Pat Kirkham, and Janet Thumim, eds, *You Tarzan: Masculinity, Movies, and Men* (London: Lawrence & Wishart, 1993).

2. Mobility/Immobility

It is commonplace to refer to Arnold Schwarzenegger as an action film icon: "Arnold Schwarzenegger is arguably action/spectacle's most representative star".[8] This approach concentrates on the notion that "stars like Schwarzenegger and Stallone, via their dominance of the action genre created an archetypal body type for that genre".[9] Susan Jeffords speaks of a new Hollywood concern with the male body which comes to be spectacularized by "hard-fighting, weapon-yielding, independent, muscular, and heroic men".[10] Where previously men's power sprang from their institutional positioning, their power now springs from their bodies in Hollywood action films. Jeffords interprets the muscular male body as a major symbolic expression of the so-called "Remasculinization of America." Accordingly, Arnold Schwarzenegger functions as a cultural key to the figuring of a hard body that serves as the locus of masculine authority and control—a kind of control that is pronounced and performed by decisively violent physical action.

Proposing to examine the formation of Arnold Schwarzenegger's visual imagery from the vantage point of the body in action seems inappropriate to the extent that it neglects the underlying logic of the bodybuilding culture as its predecessor. Since the built body is exposed via routines of stillness and is displayed by acts of posing, it seems reasonable to address "the ambiguous status of the musculature in question—what is it all for? As one critic commented, 'these baroque muscles are, after all, largely non-functional decoration.' They do not relate to the active function the hero is called on to perform".[11] I therefore suggest that we read Arnold Schwarzenegger's body as a figure that mediates between motion and motionlessness, as a site that involves solid self-presence as well as animation capacities.

"Do you visualize yourself as a living sculpture?" asks the interviewer in the documentary movie *Pumping Iron* (George Butler and Robert Fiore, 1977), whereupon Arnold Schwarzenegger replies: "Yes, definitely. Good

8 Jose Arroyo, "Arnold Schwarzenegger as Spectacle in Action (and Some More)," in *Action/Spectacle Cinema: A Sight and Sound Reader*, ed. Jose Arroyo (London: BFI, 2000), 27.

9 Ibid., 28.

10 Susan Jeffords, "The Big Switch. Hollywood Masculinity in the Nineties," in *Film Theory Goes to the Movies*, ed. Jim Collins, Hilary Radner and Ava Preacher Collins (London: Routledge, 1993), 197.

11 Tasker, *Spectacular Bodies*, 78.

bodybuilders have the same mind when it comes to sculpting that a sculptor has." Schwarzenegger's remark points to an awareness of the possibility of developing the body as art, of shaping it in a way that resembles traditional artists' work with clay or stone. Schwarzenegger had shown his heightened attention to the body as aesthetic practice as early as 1976 when he presented himself as a living statue in the Whitney Museum of American Art's exhibition "The Body as Art."[12] The built body exposes itself as somatic artwork. It does not present itself as physical power to be wasted in battle but as a contoured site of pure aesthetics. Indeed, it does so by drawing on classical art traditions, as Richard Dyer demonstrates:

> Bodybuilding makes reference to classical—that is, ancient Greek and Roman—art. Props or montages often explicitly relate body shape and pose to classical antecedents, as does writing about bodybuilding. The standard posing vocabulary was elaborated at the end of the nineteenth century in conscious emanation of the classic statuary then so prized in visual culture. Eugen Sandow, the first bodybuilding star, affirmed for himself a lineage back to the Greeks and Romans in his 1904 manual *Bodybuilding, or Man in the Making*.[13]

The subtitle of Eugen Sandow's guidebook points to a basic belief in the bodybuilding subculture: the body is considered raw material that can be built, that can be formed, that can be cultivated—that can be made. Working on the body is not regarded as a purposeful exercise or as a training method, but as a constructive practice in its own right, as an investment in perfectibility. Moreover, by exposing the sculpture as a bare body, it becomes a vehicle of display, a figure that asks not only for contemplation but also for scrutiny. Jim Hoberman emphasizes: "Mapped, quantified, evaluated, the Schwarzenegger torso is less a sex object than an object lesson, recapitulating the post-Renaissance transformation of the human body into something to be manipulated and ra-

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12 The emphasis on the body as art continues to be of interest, as a recent event exemplifies. On July 9, 2009, the Museum of Art/Fort Lauderdale, Nova Southeastern University and the 2009 NPC Southern States Bodybuilding Championship united to present "The Muscular Body as Living Art." The special event was held at the Museum's Auditorium and outdoor Sculpture Terrace, and an announcement declared that the event had been inspired by the Whitney Museum of American Art's live exhibition, which featured Arnold Schwarzenegger.

13 Richard Dyer, *White. Essays on Race and Culture* (London: Routledge, 2008), 148.

tionalized, surveyed and regulated, subjected to the institutional discipline of prisons, schools, hospitals."[14]

Hoberman's explanation hints at the Foucauldian notion that the inquisitive and examining gaze is instrumental in accessing the body because it transplants the body to the wider domain of discourse, where it can be dominated and manipulated. Besides the above-mentioned institutional discipline, it is possible to add the camera's gaze as a device that renders the body visible in a distinctive way. Dyer observes that bodybuilders "are not necessarily agile or acrobatic; the point is their size and shape, frozen in moments of maximum tension." Likewise, the cinematic showcasing of muscular male bodies incorporates "not only the posing vocabulary of bodybuilding competitions but also the *mise-en-scènes* of such non-narrative forms as physique photography".[15] Filming the built body indicates not only the possibility of physical feats but also the stability of a fixed figure. It designates an ultimate paradox. the simultaneity of crafted movement and stillness. It addresses the fascination of human beings turned into abstract figures, even to the simple pleasures and problems of striking a pose.

André Bazin's account of "the ontology of the photographic image" praises the innovation of photography for its ability to petrify life's motion and mobility. The outstanding quality of the photographic image is thus credited to "the disturbing presence of lives halted at a set moment." Photography renders the living immobile; it molds the moving body into a static statue. Further, it is one of the means by which individuals are constructed as visual objects; it thereby shows how the photographic image participates in the disciplining of the body. Following the thought of the photographic image's capacity to "embalm time," Bazin considers cinematography as photography's completion: "The film is no longer content to preserve the object, enshrouded as it were in an instant [...]. The film delivers baroque art from its convulsive catalepsy. Now, for the first time, the image of things is likewise the image of their duration".[16]

Seen from this perspective, Arnold Schwarzenegger's media existence seems to exemplify a modality capable of reconciling several characteristics of visual technologies. As the built body exists to be exposed, it tends to present

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14 Jim Hoberman, "Nietzsche's Boy," in *Action/Spectacle Cinema: A Sight and Sound Reader*, ed. Jose Arroyo (London: BFI, 2000), 31.

15 Dyer, *White*, 167.

16 André Bazin, "The Ontology of the Photographic Image," *Film Quarterly* 13.4 (1960): 8.

itself as a work of sculpture, specifically as a work that is able to reimagine its own stillness and materiality. Thus, it becomes proficient to point to the performative process of bodily creation, and, what is more, to allude to media's contribution to this very process. Whereas the photographic camera freezes mobility to immobility, the cinematographic camera attributes motion to what has no motion. Arnold Schwarzenegger's physical presence seems to reflect both directions at the same time. Actually, even his first appearances on screen offer valuable examples of the simultaneous existence of stillness and movement. This is due not only to his bodybuilding physique but also to his strong association with cartoon imagery. Jim Hoberman observes: "Not simply personifying the notion of the film star as an expensive expanse of well-lit torso, our Arnold returns the movies to their fairground origins. […] The sloping planes of his smooth, simian features are as chiseled as a comic book superhero."[17]

Arnold Schwarzenegger not only looks like a cartoon character; he has succeeded in embodying one in a remarkable way. In his first film, *Hercules in New York* (Arthur Allan Seidelmann, 1970), he was credited as "Arnold Strong," a name that clearly designates resemblance to the superhero's comic culture tradition. This association was carried further by Schwarzenegger's breakthrough film *Conan the Barbarian* (John Milius, 1982), which was a box office hit. Adapted from one of the most popular comic series of the 1970s, the movie animates the static iconography of its source to become lifelike movement. The outcome offers a kind of hyperreal cartoon imagery, a continuum between mimesis and abstraction. As filmic photography, it is sequential in time, but not spatially juxtaposed as comics are. Yet some of the central features of cartoon art seem to have been transferred to the motion picture. For example, the contemplating gaze on the hero's extra-muscular body is made possible in moments that bring the action to a standstill. When Conan is crucified on the "Tree of Woe," the narrative seems to stop and the moving image seems to freeze. Instead of combat and power, the spectator is confronted with a passive body being exhibited in extraordinarily long takes. Schwarzenegger's immobility is thus displayed in a way that crystallizes his position as a static icon.

Other films likewise emphasize the action character's stillness as a commodity in its own right. In *The Last Action Hero* (John McTiernan, 1993), Arnold Schwarzenegger, playing Jack Slater, is presented as a plastic action figure—as

17 Hoberman, "Nietsche's Boy", 30–31.

a piece of merchandise that hints at Mattel's successful toy line Masters of the Universe, featuring He-Man as the lead character. As an element of consumer culture, the plastic toy comments on the action hero's motionlessness, on a stillness that has to be animated by those who play with it. Ultimately, this arena of tension, this shifting field of mobile/immobile characteristics, reaches its climax in Arnold Schwarzenegger's embodiment of Mr. Freeze, the villain in *Batman and Robin* (Joel Schumacher, 1997). Again based on a successful comic series, this character is a veritable snowman, planning to freeze first Gotham City and then the whole world. Demanding mastery over movement and stillness, Mr. Freeze aspires to turn the living bodies of his enemies into the inanimate shapes of sculpture. Interestingly enough, he is accompanied by a bionic muscleman character named Bane. Chemicals pump his muscles to six times life-size portraying the very embodiment of excessive physical performance that enabled Schwarzenegger to become a star.

By offering mutable visual strategies of display, Arnold Schwarzenegger's outstanding corporeality presents itself as performatively constructed. It is rendered as a multi-mediated body that knows varying applications of its representational forms. Designating action and agility as well as motion withheld, it shows a complex vision of itself and its medium.

3. Masculinity/Femininity

Speaking about a major shift in Arnold Schwarzenegger's star persona in the 1990s, Michael A. Messner observes: "Taken together, Schwarzenegger's films of the 1990s display a masculinity that oscillates between his more recognizable hard guy image and an image of self-mocking vulnerability, compassion and care".[18] Mediating between violent indifference and tender concern, between physical hardness and sensitivity, between destroying and creating, Schwarzenegger became an intricate figure bearing significant cultural meaning: "He is a muscleman pregnant with sociological and semiotic significance".[19] Indeed, it is possible to trace this kind of symbolic pregnancy back to the body and the implications it involves. However, the attention to the

18 Michael A. Messner, "The Masculinity of the Governator: Muscle and Compassion in American Politics," *Gender & Society* 21.4 (2007), 467.

19 Arroyo, "Arnold Schwarzenegger as Spectacle in Action", 27.

body raises the question not only of its own position in a widespread discursive terrain, but also the question as to how it relates to other bodies. Sean Nixon underlines: "Particular versions of masculinity are not only constituted in their difference from other versions of masculinity but are also defined in relation to femininity. This suggests, then, that an adequate understanding of masculinity requires our locating it within the wider field of gender relations as a whole."[20]

As masculinity and femininity are in constant interaction, they influence the conditions for each other's presence and thereby constantly transform themselves. Condensing this issue and expanding it to the body's materiality, Schwarzenegger's cinematic portrayal of a pregnant man in *Junior* (Ivan Reitman, 1994) provides a remarkable example, as he appropriates

> an ultimate bodily sign of femaleness: pregnancy and childbirth. But Schwarzenegger's gender hybridity could never be mistaken as an embrace of […] androgyny. Instead, in the Kindergarten Commando masculinity of Arnold Schwarzenegger, we see the appropriation and situational display of particular aspects of femininity, strategically relocated within a powerfully masculine male body.[21]

Schwarzenegger's embodiment of male pregnancy seems to point to a conservative political project, to "the restoration of the family to its former status as a strong Ideological State Apparatus and the reinstatement of the father within this patriarchal stronghold".[22] Fathers, fathering, and fatherhood have emerged since the late 1970s as a topic of major interest to researchers and policymakers alike. Debates over gender relations have aimed at exploring the discourse of the father as a historically changing practice, as a shifting series of complicated and often contradictory configurations. By describing the father as a multifaceted figure, researchers have proposed considering the paternal function on several levels. One of these levels concerns the intersection of cultural representation and social practice. Assuming that patriarchy surfaces as a political and social function perpetuated by cultural images and

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20 Sean Nixon, Sean "Exhibiting Masculinity," in *Representation: Cultural Representations and Signifying Practices*, ed. Stuart Hall (London: Sage Publications, 1997), 298.

21 Messner, "Masculinity of the Governator", 467.

22 Marsha Kinder, "Back to the Future in the 80s with Fathers & Sons, Supermen & Pee-Wees, Gorillas & Toons," *Film Quarterly* 42.4 (1989): 4.

aesthetic structures, mass-cultural representations of fatherhood can be understood as participants in ongoing struggles over the father as person or principle. Although filmic representations do not directly reproduce the way that people experience their daily lives, they can serve as "an instructive instance of how the culture industries selectively recognize social concerns".[23]

The changing nature of fatherhood depends on and is inscribed within a cultural process that provides and challenges the values and beliefs surrounding possible images of fatherhood. One of these images—and a rather radical one, as it discusses the question of fathering in relation to the materiality of the male body—is sketched out in Ivan Reitman's comedy Senior. The film presents two scientists, Dr. Alex Hesse (Arnold Schwarzenegger) and Dr. Larry Arbogast (Danny de Vito), who work on a new fertility formula that will reduce the chance of a woman's body rejecting an embryo and thus causing a miscarriage. When their research funding is withdrawn and their request for human trials is denied, they decide to test the project by impregnating Hesse. The two men agree that they will terminate the pregnancy after a few months, but later Hesse, who has begun to change both emotionally and physically, insists on carrying the baby to term.

In a scene that presents the two men in Dr. Arbogast's office, they lovingly examine Dr. Hesse's fetal sonogram. "The little string of pearls … that's the spine," Dr. Arbogast explains affectionately, while Dr. Hesse looks reverently at his unborn child. Jane Maree Maher comments: "The visualization of the fetus through the use of medical imaging technology is positioned as a key turning point in the film narrative […]. Seeing, for these male characters, is a necessary precondition to developing any relationship of nurturance with the child-to-be. This insight permits them to become involved."[24] It is this image of caress and tender bliss that departs most strikingly from conventional filmic representations of the male body, even more so since it is applied to a body that is associated with the physical strength of an action hero. Given that Schwarzenegger's star persona used to center on the visual staging of hard-fighting muscles, the display of an overtly passive body points to an alternate discourse of masculinity. As the scene's camera position emphasizes, it is not Schwarzenegger's hyper-masculine physique that fills the screen but instead

23 Elizabeth G. Traube, *Dreaming Identities: Class, Gender and Generation in 1980s Hollywood Movies* (Boulder: Westview Press, 1992), 146.

24 Jane Maree Maher, "A Pregnant Man in the Movies: The Visual Politics of Reproduction," *Continuum* 22.2 (2008), 281–282.

de Vito's short stature, which bends over the immobile patient stretched out on an examination couch. The mise-en-scene does not attempt to emasculate the protagonist, however: Although the scene deprives Hesse of almost any action or movement, he is not shown to be impotent or inept. Rather, he is portrayed as the bearer of new responsibilities.

Integral to this vision of paternal power is the invocation of the newfound fatherly role in Schwarzenegger's preceding films. Throughout the 1990s, Schwarzenegger's star text gradually embraced a softening of his hardened image, primarily through the construction of Schwarzenegger as an ideal loving father in films like *Kindergarten Cop* (Ivan Reitman, 1990). Susan Jeffords emphasizes: "Throughout the late 1980s, fathering was a key characterization and narrative device for displaying the 'new' Hollywood masculinities. […] Fathering became the vehicle for portraying masculine emotions, ethics, and commitments, and for redirecting masculine characterizations from spectacular achievement to domestic triumph."[25] This kind of paternal trajectory should not be underestimated. While it does not erase the star text's power and authority, it instead relocates it into another terrain, namely the realm of fathering. lust how carefully Schwarzenegger's physical presence and dominance is brought into play is shown in another scene of the film that dramatizes Hesse's defense of his unborn child. Schwarzenegger's physical agility and the sound- track's up-tempo music score collaborate to convey a sense of heightened action. The excitement reaches its climax when Schwarzenegger, insisting on keeping his baby, cries out: "My body—my choice!" It is this reverberation of a feminist slogan—a slogan that was formulated to propagate women's rights to abortion—that most clearly exemplifies the film's conservative agenda. Howard Feinstein remarks: "*Junior* is clearly keyed to the mood of America. A pro-life ode to the nuclear family, Ivan Reitman's film opened in the wake of the recent conservative Republican sweep of both Congress and the Senate—and yet another assassination attempt (in Canada) on a pro-choice doctor."[26] Feinstein's observation addresses a rightward turn in U.S. culture after the radical critique and political movement of previous decades had put in question institutions such as the family and patriarchy. Elizabeth G. Traube explains: "The New Right sought to tap nostalgia for the traditional family and resentment of independent

25 Jeffords, *Hard Bodies*, 166.

26 Howard Feinstein, "Junior," *Sight and Sound* 5.1 (1995), 47.

women. […] The ideological legitimation of the New Right derives from its aggressively antifeminist 'pro-family' campaign".[27]

Since independent women and advances in reproductive technology present substantial threats to the weakening patriarchy, some kind of countermeasure has to be taken. Thus, Schwarzenegger's attempt to fight for his body may be understood as a way of compensating for the intimidations confronting men due to changing conditions of re- production. Judith Roof underlines:

> The Arnold figure's overcompensatory muscles are situated at the nexus of interlocking American anxieties about control (the illusion of being able to shape culture), potency, masculinity, and paternity threatened by female independence, reproductive freedom, overgrown technology, and a loss of world prestige. These anxieties are refocused specifically in issues of paternity, whose loss is seen as causing cultural decay and whose revivification is imagined to be cultural salvation in the late 1980s and 1990s.[28]

Seen in this light, the film's policy clearly agrees with Schwarzenegger's conservative Republican politics, taking into account that this kind of paternal discourse may help fortify Schwarzenegger's bid to become the ultimate patriarch: a state leader. Beyond the surface of several happy-go-lucky confusions, Schwarzenegger's struggle to protect his baby from hostile intervention reads like an anti-abortion campaign. Thus, emphasizing sensitive fatherhood in the realm of comedy does more than displaying contemporary cultural concerns with gender and parenting. It also provides the metaphor of the father as the preferred protector of unborn life, solidifying the symbolic power of the male body in previously unscreened terrains. Taking into account scientific developments like in vitro fertilization, Maher points to a historical turning-point, "when the relative newness of assisted reproductive technologies meant that much anxiety and interest was focused on the potential outcomes of these innovations for reproduction, and for women's and men's roles in childbearing." As a result, it was possible to negotiate the binary opposition of masculinity/femininity in a new-found way: "Using the space for new visual representations created by scientific advances, Junior presents a positive

27 Traube, *Dreaming Identities*, 129.

28 Judith Roof, *Reproductions of Reproduction. Imaging Symbolic Change* (New York: Routledge, 1996), 58–59.

image of men and pregnancy, while simultaneously marginalizing women's reproductive capacity and activity".[29]

The fantasy of the pregnant father serves to reclaim the paternal function, which was allegedly lost due to female independence and social change. As the film's scenario shows, fatherhood has been redefined in a far-reaching way. Junior makes it possible to extend the male role in parenting to physical ends. Moreover, it presents fathering as a narrative device that concerns both cultural production and reproductive choices.

4. Biology/Technology

Analyzing the "science-fictional connotations of Schwarzenegger's gubernatorial campaign," Carl Freedman observes a proliferation of connections to "the most widely popular of all Arnold's roles: the Terminator. The word *terminator* itself and its variants were every- wherein the candidate's speeches, in his campaign literature, and in statements by supporters." Claiming that "it is science fiction that suits Arnold particular resources best"[30], Freedman points to a central concern surrounding the Schwarzenegger figure, namely its exposure of technology's reconfigured meaning with regard to human experience. Having become one of the best-known emblems of film history and having been declared an icon of cultural significance, the Terminator designates a passage from confidence to indecision, centering upon the relation between biological and technological definition.[31]

This kind of border crossing is actually sketched out in the term itself: in astronomy "the terminator is the line between the day side and the night side of a planetary body." Following this definition one step further provides an astonishingly instructive proposal for expanded discussion: "Examination of the terminator can yield information about the surface of the body".[32] Indeed, the Terminator raises questions about bodily boundaries and the binaries that

29 Maher, "A Pregnant Man in the Movies", 279.

30 Carl Freedman, "Polemical Afterword: Some Brief Reflections on Arnold Schwarzenegger and on Science Fiction in Contemporary American Culture." *PMLA* 119.3 (2004), 541.

31 In 2008, *The Terminator* was considered "culturally, historically, or aesthetically significant" by the Library of Congress and selected for preservation in the United States National Film Registry.

32 "Definition Terminator," Webster's Online Dictionary, 2006, Accessed 1 May 2010, http ://www.websters-online-dictionary.org/definitions/terminator?cxy artner- pub-093945

are associated with them. Introducing the figure in the movie trilogy's first film, *The Terminator* (James Cameron, 1984) is portrayed as a cybernetic organism or cyborg, a mechanical contrivance with a human-looking outside. Kyle Reese, a human resistance fighter, delivers the following classification: "The Terminator is an infiltration unit, part man, part machine. Underneath, it's a hyper-alloy combat chassis—microprocessor-controlled, fully armored. Very tough. But outside, it's living human tissue flesh, skin, hair, blood, grown for the cyborgs." Shifting from the rigidly fixed to the frighteningly unstable, the Terminator mediates between biologics and techno-logics. Its thematic and aesthetic formations imply changes in the body's self-conception. Breaking with a long-established tradition that constructs the body as a site of impermeable boundaries serving as a basis for a sound identity, it opens up a space where fissures in the conventional perception can occur. Claudia Springer underlines: "What popular culture's cyborg imagery suggests is that electronic technology also makes possible the thrill of escape from the confines of the body and from the boundaries that have separated organic from inorganic matter".[33]

If the cyborg transgresses boundaries between biology and technology, between flesh and steel, then Arnold Schwarzenegger seems to be the most appropriate applicant to embody the figure. As early as Pumping Iron, a film whose very title addresses the issue quite fittingly, "it would seem apparent from the very start that the bodies we see are not natural," since they are "obviously and necessarily constructions"[34]. Via the vehicle of a behind-the-scenes documentary movie, Schwarzenegger's extra-muscular physique depends on the underlying logic of a machine-built body. Pumping iron leads to "technologically honed, scientifically fed bodies".[35] It is the machine that organizes and regulates the body's outcome; it is its logic of serial mechanical movement that shapes the body as its own product. Scott Bukatman stresses this point by stating, "Schwarzenegger fuses the natural ability of the athlete with

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0753529744%3Av0qdol-tdlq&cof=FORlD%3A9&ie=UTF-8&q= terminator&sa=Search #906>.

33 Claudia Springer, "The Pleasure of the Interface," In *Technology and Culture. The Film Reader*, ed. Andrew Utterson (London: Routledge, 2005), 73.

34 Chris Holmlund, *Impossible Bodies: Femininity and Masculinity at the Movies* (London: Routledge, 2002), 18.

35 Dyer, *White*, 174.

a symbiotic relation to technology".[36] This proves true of the tendency to think of the body itself as a mechanism. Furthermore, bodybuilding's technology is preoccupied with the construction of better machines to work on the bodies now conceived of as machines. The bodybuilding machinery thus turns out to be a technology that produces bodies in its own image. Viewed from this perspective, lifting routines, relying upon the logic of infinitely repeatable mechanisms, function to fabricate a veritable techno-musculature.

Likewise, Schwarzenegger's portrayal of the Terminator does not intend to differentiate humans from machines but instead situates bio-logy and technology as coexistent, codependent, and mutually defining. Claudia Springer points out that "while robots represent the acclaim and fear evoked by industrial age machines for their ability to function independently of humans, cyborgs incorporate rather than exclude humans, and in so doing erase the distinctions previously assumed to distinguish humanity from technology."[37] *The Terminator* emphasizes this structure by presenting the cyborg as being indistinguishable from humans. The Terminator consists of a metal endoskeleton combined with an external layer of living tissue so that it resembles a human being. Because of its outer appearance, the cyborg cannot be recognized as nonhuman. The movie thus acutely accentuates the similarities between the Terminator and its human antagonist Kyle Reese: both are beings of a post-apocalyptic future, both are transported back in time to 1984 Los Angeles. Moreover, their time travel is portrayed in exactly the same way: Both arrivals are visually accompanied by identical blue lightning, both bodies are dashed to the street, both are shown as naked figures in fetal position. Furthermore, both choose the clothing of social outsiders (the Terminator attacks some punk youths in order to steal their outfits; Kyle takes the trousers of a homeless man). In the course of the narrative, both get hurt on the right arm and on the left side of their faces. On the level of stylistic arrangement in space, both are frequently presented in close-ups, and both are included in extended passages of crosscutting with shots of Sarah Connor. After all, their narrative function is precisely the same: Both characters fight for access to Sarah Connor, both were chosen because of their battling efficiency, both follow their orders consequently and uncompromisingly—and, in the end, both of them die for their command.

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36 Scott Bukatman, *Terminal Identity: The Virtual Subject in Post-Modern Science Fiction* (Durham: Duke University Press, 2002), 303.

37 Springer, "The Pleasure of the Interface", 73.

Moreover, the movie suggests that humanity has already become integrated with technology: "Machines provide the texture and substance of this film: cars, trucks, motorcycles, radios, TVs, time clocks, phones, answering machines, beepers, hair dryers, Sony Walkmen, automated factory equipment".[38] Thus, confusions over the boundaries between the self and technological systems become obvious not only in the figure of the Terminator's man-machine but actually in everyday life. Brian Jarvis emphasizes:

> The Terminator is also simply a paradigmatic form for the intractability […] of the more mundane technological forms which compromise the landscape through which the characters in the film move: a process that begins with answering machines and personal hi-fis, it is suggested, builds to global transportation and communication systems and culminates with the 'Skynet' computer network, which will eventually design the perfect fusion of human and machine.[39]

In an age that witnessed considerable advances in prosthetic surgery and that invented artificial pacemakers as programmable, implantable devices, the differences between human and technological forms seem to have become constantly challenged. According to Jean Baudrillard, the distinction between Self and Other has already collapsed. Instead of technology forming an extension of man, Baudrillard inverts McLuhan's famous phrase by locating the subject inside an integrated circuit of media flow. This contravenes a model of techno-human relations that views the subject as a discrete component that is connected to but fundamentally separate from media networks. In the age of new technology, the notion of prosthesis takes on new meanings as bodies are theorized as flawlessly conjugal to technological forms. Baudrillard speaks of a "point when prostheses are introduced at a deeper level, when they are so completely internalized that they infiltrate the anonymous and micro-molecular core of the body, when they impose themselves upon the body itself as the body's 'original' model".[40] Similarly, Arthur and Marilouise Kroker consider

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38 Constance Penley, "Time Travel, Primary Scene and the Critical Dystopia," in *Liquid Metal. The Science Fiction Film Reader*, ed. Sean Redmond (London: Wallflower Press, 2007), 126.

39 Brian Jarvis, *Postmodern Cartographies. The Geographical Imagination in Contemporary American Culture* (New York: St. Martin's, 1998), 161.

40 Jean Baudrillard, *The Transparency of Evil: Essays on Extreme Phenomena* (London: Verso, 2002), 119.

electronic challenges to subject definition, pointing to the precarious status of the body: "[The body's] reality is that of refuse expelled as surplus-matter no longer necessary for the autonomous functioning of the technoscape".[41] New ways of disciplining the body appear via novel technological inventions.

Thus, *The Terminator* does not present the body as a stable entity that can be distinguished from technological trappings, but instead displays humankind and machine as inextricably linked:

> Individuals are presented as becoming increasingly identified with and through a second nature of technological forms: Sarah Connor routinely clocks in for work and her flatmate is permanently plugged to her Sony Walkman; she is reduced to a voice on a tape recording […] and is heavily reliant upon machines in her flight from the Terminator.[42]

Taking into account the heightened mediatization of the body, bio-logics and techno-logics are not separated but instead appear as variants of the same principle: "Whilst the human is being encased within a second skin of technologies, the technological, in the guise if the Terminator, has acquired a living tissue to flesh out its robot skeleton." Thus, the film does not proceed to deliver an "us against them" argument but emphasizes Schwarzenegger's embodiment of the cyborg as a figure of far-reaching cultural impact. Consequently, we are made "to identify with Arnold as our culture hero once we learn that traditional human/machine antitheses have achieved synthesis".[43] The film stresses this perspective by allowing the viewer to become a cyborg himself. In the form of several subjective point-of-view-shots, we are offered to see the world through the Terminator's eyes. The film thus gives us a cyber-view perception, shown through an infra-red lens and accompanied by analytical data.

Instead of outlining a dystopian future world, the Terminator films seem to imply this: It's all about Arnold. While neither Robert Patrick (who played

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41 Arthur Kroker and Marilouise Kroker, "Theses on the Disappearing Body in the Hyper-Modem Condition," in *Body Invaders: Panic Sex in America*, ed. Arthur Kroker and Marielouise Kroker (New York: St. Martin's, 1987), 21.

42 Jarvis, *Postmodern Cartographies*, 162.

43 Doran Larson, "Machine as Messiah: Cyborgs, Morphs and the American Body Politic," in *Liquid Metal: The Science Fiction Film Reader*, ed. Sean Redmond (London: Wallflower Press, 2007), 194.

the T-1000 in *Terminator 2: Judgement Day* [James Cameron, 1991]) nor Kristanna Loken (who played the T-X in *Terminator 3: Rise of the Machines* [Jonathan Mostow, 2003]) became stars, it is Arnold Schwarzenegger who succeeded in making the cyborg spectacularly visible. Referring to the film series' changing characters and its centering on the Arnoldian figure, Bukatman remarks: "Electronic technology becomes a new site of anxiety: it can't even be relied upon to keep its shape. By contrast, Schwarzenegger, as the 'nice' Terminator, is predictably mechanical and trustworthy—he always looks like Arnold".[44] Thus, Arnold's most famous line "I'll be back" does not come out as a menace but as a promise—and, moreover, as a firm statement of what it means to be a film star. Speaking of constant and inconstancy as two vectors of acting, Stephen Mulhall points out: "If […] we acknowledge that the relationship between these two vectors in screen acting is determined by the material basis of the medium, hence by the camera's automatic reproduction of the individual human physiognomy placed before it, then we would expect the actor to be prior to the character in film."[45] Continuing to develop this position, Mulhall remarks that the figure "whose appearance in the 'Terminator' films helped to project him into the highest reaches of cinematic fame was the one who […] allowed the camera to transcribe and retranscribe his utterly distinctive physiognomy without obstacle or interruption […]—Arnold Schwarzenegger"[46]. Thus, the body we see on screen is not just some cyborg character—it IS Arnold. Since it points to the intertwined bio/techno-logics of cinematic representation, the idiosyncrasy of the Arnoldian figure lies in its capacity to mediate between the producing and the produced.

5. Conclusion

Arnold Schwarzenegger's incorporations provide us with the means to make connections between abstract and concrete concepts—and, what is more, to reflect upon these concepts. For instance, they provide us with a partial understanding of complicated ideas such as movement, gender, and machine. While they evolve as a consequence of blurred lines between mobility and immobility, between masculinity and femininity, and between biology and tech-

44 Bukatman, *Terminal Identity*, 305–306.

45 Stephen Mulhall, *On Film* (London: Routledge, 2002), 87.

46 Ibid.

nology, they point to the instability of fixed definitions. In addition to this, they have an element of flexibility within them that can be stretched beyond the information given by raw sensation. Arnold Schwarzenegger's embodiments thus do not represent already existing knowledge; rather, they form knowledge as a genuine mode of production. Since they are cinematically built bodies, they indicate a retrieval of their physical resources as well as an interrogation of their filmic form. As such, Arnold is the body made possible.

Dimension and Duration
On the Aesthetic Relationship of Space and Time in 3D Cinema

Among the particular accomplishments of cinema, if one follows the philosopher Edgar Morin, is the cultivation of a specifically relational proportion between space and time, a type of reciprocal expansion and transformation, which, as a result, constitutes an expanded dimension of perception:

> Time has acquired the movable nature of space and space the transformative powers of time. The double transmutation of cinematic time and space has produced a kind of unique symbiotic dimension, where time is incorporated in space, where space is incorporated in time, where 'space moves, changes, turns, dissolves, and recrystallizes,' and where time 'becomes a dimension of space.' […] Space-time, such is the total and unique dimension of a *fluid universe*.[1]

Following this observation, my contribution explores the potential of 3D cinema to unfold its own aesthetic form of fluid spatiotemporality. I will argue that the staging of expanded space, which has characterized stereoscopic film since its inception, is connected to a specific understanding of temporal continuity. This is particularly noticeable in the tendency to leave behind the fragmenting form of editing and instead to favor the long, uncut shot. I will explore what aesthetic and narrative possibilities this opens up for 3D cinema in three sections. The first is concerned with the early phase of stereoscopic cinema and the first approaches to a distinct 3D film grammar; the second

1 Edgar Morin, *The Cinema, or The Imaginary Man*, trans. Lorraine Mortimer (Minneapolis: University of Minneapolis, 2005), 64.

then deals with classical cinema and the aesthetic capabilities of three-dimension spatial depth gradation, and the third considers digital 3D film as an aesthetic reflection of altered perceptive dispositions within digital media culture.

1. Early Cinema

Numerous scholars have drawn attention to the connecting lines between the technical development of early cinematography and stereoscopy. In his essay "The Myth of Total Cinema," for example, André Bazin mentions an approach to film historiography that highlights the stereoscopic understanding of space as the actual catalyst for the development of cinema: "[T]he film historian P. Potoniée has even felt justified in maintaining that it was not the discovery of photography but of stereoscopy, that […] opened the eyes of the researchers."[2] Siegfried Kracauer also points to stereoscopy as the antecedent of the first cinematic images, stating: "The crowded streets captured by the stereographic photographs of the late 'fifties thus reappeared on the primitive screen."[3] These references show that stereoscopy's spatial awareness of the image not only preceded cinema historically but also crucially influenced and informed its image forms. Since its introduction in the middle of the nineteenth century, stereoscopic productions of images and viewing systems experienced enormous popularity. Stereo photographs and stereo slides, which could be viewed individually through a device, were widely available for household use; furthermore, there were projection mechanisms for collective use in the public sphere. The spatial illusion of depth that they created and imparted were a stable component of the visual culture, and in this way, "the immense popularity of stereoscopy undoubtedly contributed to the development of a historically distinct set of expectations for early cinema."[4]

Among the media practices that are aligned with stereoscopic viewing conditions there is, on the one hand, the way of seeing, supported by tech-

2 André Bazin, "The Myth of Total Cinema," in *What is Cinema?*, trans. Hugh Gray (Berkeley: University of California Press, 1967), 20.

3 Siegfried Kracauer, *Theory of Film: The Redemption of Physical Reality* (Oxford: Oxford University Press, 1965), 31.

4 Michael Wedel, *Filmgeschichte als Krisengeschichte. Schnitte und Spuren durch den deutschen Film* (Bielefeld: transcript, 2011), 72.

nical equipment, that fosters an intensification of the viewing experience by excluding one's perception of the surroundings and, on the other hand, still more importantly, the perception of an intangible or dematerialized image. Unlike in two-dimensional photography, the stereo image is not fixed to a material backing but has a far more ephemeral constitution: "A stereoscopic image as such consequently does not exist; the stereoscopic impression of space is a purely hallucinatory one, created by the viewer on the basis of an active process of perception."[5] Spatial forms, by means of which such an image impression could be achieved and especially emphasized, primarily focused on three-dimensional volume effects, that is, visually "lifting" an object off the screen that it seems to hover over. It is this aesthetic conception that proved to be exceptionally influential for the moving pictures of the gradually forming cinematography. The combination of the unfixable image-object with a flowing movement was critical in the process, a merging, therefore, that organizes the fluidity of what is perceived both spatially and temporally.

This merging comes especially to the fore in a work considered to be the primal scene in cinema and, simultaneously, the first 3D film: *L'Arrivée d'un Train en Gare de La Ciotat*, filmed by Louis and Auguste Lumière in 1895 and released as a stereoscopic version three decades later[6]. Undoubtedly, the specific fascination inspired by early cinematic perception derived from the liveliness and lifelike quality of the projected moving pictures. Yet the new way of looking does not lie solely in the observation of a familiar, lifelike everyday scene. Rather, it is the continuity and processuality of the movement, its fluidity, that makes the image itself move. This can be seen in the change in proportions (the train approaches from the background of the frame into the foreground) and, further, in the diffuseness of differences as well as in the obscuring of any possibility of differentiation. One cannot determine where exactly the movement begins and where it ends. As a continuous image (uncut and not separated by any markings), the film does not feature any determinable points in time but, rather, the flow of time, its continuous being. In the footage, options for spatial orientation are not fixed in place as static subdivisions but presented as blurry transitions. Thus, for example, the smoke

5 Ulrike Hick, *Geschichte der optischen Medien* (Munich: Fink, 1999), 279.

6 A compilation of sources on the Lumières' stereoscopic film experiments is provided by Ray Zone, *Stereoscopic Cinema and the Origins of 3D Film, 1838–1952* (Lexington: University Press of Kentucky 2007).

from the train causes the image background not to appear flat but malleable, so that the horizon is shifted into an undefinable distance.

The intertwining of spatial depth and temporal continuity evokes a sense of reality that goes far beyond the representational abilities of the static flat image. This impression of reality, moreover, is reinforced by the fact that it mediates a feeling of candidness and limitlessness. For Siegfried Kracauer, the filmic turn toward the incomplete is one of the most significant media qualities of cinematography. Fundamentally, he states, "films tend to capture physical existence in its endlessness. Accordingly, one may also say that they have an affinity, evidently denied to photography, for the continuum of life or the 'flow of life,' which of course is identical with open-ended life."[7] Along with the aforementioned image of the crowded streets, Kracauer cites the Lumières' train station scene as one of the select filmic scenarios of this constant flow: "It was life at its least controllable and most unconscious moments, a jumble of transient, forever dissolving patterns […]. The much-imitated shot of the railway station, with its emphasis on the confusion of arrival and departure, effectively illustrated the fortuity of these patterns."[8]

However, it should be added that the fluidity of the lifelike, everyday scene correlates with a clearly oriented conception of the image, that, in other words, the seemingly coincidental is arranged and structured within the framework of an image-aesthetic operation. Thus, for example, it is notable that the length of the recording is organized in a way that results in a temporally composed augmentation of movement dynamics. The film begins with a relatively empty space, in whose background one can discern an object at a distance. As a result of the train moving from the background into the foreground and continuously growing as an image object, the viewer's attention is increasingly drawn to and focused on the object. A few people waiting on the platform are at first the only thing visible. As the train arrives, however, the movement of the figures increases: they go from static positions to rushing around, and even more people move into the picture from offscreen. Only here does the "confusion" observed by Kracauer begin to develop, only now is the image filled with intersecting motions: passengers get on and off the train, people walk toward or away from others; the figures move into the foreground and background, from left to right and right to left. The resulting alternating crowding and dispersion create a semblance

7 Kracauer, *Theory of Film*, 71.

8 Ibid., 31.

of the uncontrollable and unplanned, the accidental and indeterminable, of everyday life. Along with this, however, there is a certain type of dramaturgical disposition, whose increasing dynamics are based on the temporal structure of the recording. Only in the continuous time of the uncut shot can formations gradually develop, only in the flowing progression of the events does the abundance of the movements become perceptible.

The spatial effect in stereoscopic cinema is thus different than that of the static stereo photo. It develops out of film's temporality and emphasizes this sense of time with motion sequences, whose fluid movements the fixed nature of photography had not been able to depict. 3D film takes on the aesthetic of depth of field from the stylistic tradition of stereophotography, or, in other words, the precise perceptibility of objects in both the foreground and background. Along with this perceptual basic, the question of how the movements of objects and forms can be set in relation to this arises as a new specific characteristic of film. The early experimental phase of 3D film features various approaches to this question. On the one hand, there is the directed movement of an object from the depth of a picture into the foreground (a type of augmentation and overwhelming that pushes the events onscreen to the fore); on the other hand, there are also the smallest elusive movements, such as in the smoke in the background (a type of staging that causes the image space to seem more plastic and extends it to the rear). Both directionalities are achieved via the 3D moving image's passage of time, even more so: they both become discernible simultaneously in the same single shot. The various dimensions and dynamics of movement are developed not sequentially but simultaneously; they do not unfold between images but in the image. In essence, the first narrative possibilities are already in place. For example, events can play out simultaneously in both the foreground and the background and thereby dramaturgically influence each other; furthermore, single objects or figures can especially be accentuated or stressed by the motion-induced change of proportions, while others appear less conspicuous in their unchanged position. The first 3D film, *L'Arrivée d'un Train en Gare de La Ciotat*, is not exceptional because of what it shows (it is a familiar, everyday scene) but because of the way that it shows it (from an unusual and unfamiliar perspective that results from the choice of the camera's point of view and from its shot length). The content is thus nothing new, but the form is: enlargements and reductions, as well as malleable alterations and deformations, become perceptible in continuous filmic progression and thus acquire the function of meaning creation. Even though the Lumières' first cinematic

works were long considered primitive precursors of cinematic art and classified as underdeveloped due to their lack of editing, they nevertheless already contained the core elements of an aesthetic-narrative potential for the continuous three-dimension moving picture.

2. Classical Cinema

Endowing the projected image with spatial volume has been one of the ongoing efforts of cinema since early film history. Along with Auguste and Louis Lumière, Edwin S. Porter and William E. Waddell also experimented with stereoscopic processes: their test films were shown for the first time in 1915 in New York's Astor Theater. A few years later, Harry K. Fairall produced the first anaglyph feature-length film with *The Power of Love*, which premiered in Los Angeles in 1922. The first 3D film with sound, Guido Brignone's *Nozze vagabonde*, was presented in Italy in 1936. Around the same time, the Zeiss Ikon *Raumfilm* process was developed in Germany. In 1937, one of the first films produced with this technology premiered at the Ufa-Palast in Berlin: *Zum Greifen nah* by Curt Engel and Karl Schröder, a promotional 3D film for life insurance from *Volksfürsorge*. In the 1940s, several feature-length 3D films were shown in the USSR, among them *Robinson Crusoe* (Aleksandr Andriyevsky, 1947), which contained color sequences and was screened through a lenticular projection system that did not require viewers to wear 3D glasses.[9]

After these few scattered approaches, 3D film was given a new impetus in the 1950s, a phase that is considered the "golden age of 3D motion pictures."[10] The reason for this upswing, which drove growing investments in 3D technologies and increased production of stereoscopic films, was one of the greatest crises that classical cinema had experienced up to that point. With the expansion of television, the number of cinema audiences dramatically dropped, so much so that cinema tried to stand out against the new competitive medium. The strategies that were developed for this purpose strove,

9 On the early experimental history of 3D film, cf. in detail James L. Limbacher, *Four Aspects of Film. A History of the Development of Color, Sound, 3D and Widescreen Films and their Contribution to the Art of Motion Picture* (New York: Arno Press, 1978) and Ray Zone, *Stereoscopic Cinema and the Origins of 3-D Film, 1838–1952* (Lexington: University Press of Kentucky, 2007).

10 Zone, *Stereoscopic Cinema*, 149.

above all, to play the largeness of the cinematic image against the smallness of the televisual image, that is, not only to emphasize but greatly enhance the specifically filmic accomplishments of the big-screen experience. Edgar Morin describes this aesthetic expansion as follows:

> The moment there was a serious crisis in cinema attendance, the search for a supplement of objective presence brought about the extension (CinemaScope, Cinerama) and volumization (stereoscopy) of the image. It is because they constitute two concretizing aspects of the same tendency toward the emancipation of the image from the screen that the two techniques asserted themselves and fought against each other at the same time.[11]

In his essay "Will CinemaScope Save the Film Industry?" André Bazin addresses the differentiation of cinema from television in the 1950s, i.e. the filmic exploration of a visual experience that exceeds and surpasses TV images. Like Morin, he points to the crisis of cinema as an innovation driver and names Cinemascope and 3D as the apparent tendencies of an expansion of the cinematic aesthetic. Furthermore, however, he asks about the consequences of this expansion for the development of filmic language. According to Bazin, the expansion of the image space could bring back the art of the long shot. For Bazin, this had been long repressed as a stylistic achievement by the concentration on editing as the determining filmic structural form. Its return and reconstitution are already beginning to show, however, so that the dominance of editing is increasingly weakened. Bazin states:

> That's the operative word here: *editing*. […] It is not true that cutting into shots and augmenting those shots with a whole range of optical effects are the necessary and fundamental elements of filmic expression, however subtle that expression might otherwise be. On the contrary, one can see that the evolution of film in the last fifteen years has tended toward the elimination of editing.[12]

Bazin's argument against editing as a foundational element of film aesthetics is guided by the fundamental capability of cinema to make time percepti-

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11 Edgar Morin, *The Cinema, or The Imaginary Man*, trans. Lorraine Mortimer (Minneapolis: University of Minnesota Press, 2005), 140.

12 André Bazin, "Will CinemaScope save the film industry? [1953]" *Film Philosophy* 6, no. 2 (2002).

ble as a continuum. Film is a medium of time whose unique strengths lie in the ability to present the continuous flow of time as something connected and cohesive. On the contrary, editing breaks up and destroys this unity of the temporal elapsing, since "[t]he expression of concrete duration conflicts with the abstract time of montage."[13] Along with the ability to experience the passage of time, Bazin notes a further advantage of the uncut, uninterrupted shot. This benefit has to do with the depth of field, a process that Bazin appreciates in particular because of the intellectual involvement of the viewer. The depth of focus assumes "a more active mental attitude on the part of the spectator and a more positive contribution on his part to the action in progress. While analytical montage only calls for him to follow his guide, to let his attention follow along smoothly with that of the director who will choose what he should see, here he is called upon to exercise at least a minimum of personal choice."[14] Everything that the filmic image can comprise in terms of complexity is retained in the long, deep-focus shot. In this respect, it calls on viewers to move around in the image space in order to explore its ambiguity and intricacy.

Alfred Hitchcock's 3D film *Dial M for Murder* (1953) serves as an outstanding example of the way the retention of the filmic image's heterogeneity can be combined with the depth of the multi-tiered space. Unlike many other stereoscopic films of the 1950s, which emphasized the spectacular effects of 3D technology and employed them as a supplementary attraction,[15] Hitchcock understands the stereoscopic aspect of space not as an additive, but generative, principle. This awareness of the spatial-staging function of the 3D process can especially be seen in his decision to markedly reduce the frequency of cuts and dispense with elaborate camera movements. The underlying concept of the film is as simple as it is compelling. *Dial M for Murder* is a chamber play that almost never leaves its internal space.[16] The film's narrative dynamic

13 André Bazin, "The Virtues and Limitations of Montage," in *What is Cinema?*, trans. Hugh Gray (Berkeley: University of California Press, 1967), 52.

14 André Bazin, "The Evolution of the Language of Cinema," in *What is Cinema?*, trans. Hugh Gray (Berkeley: University of California Press, 1967), 35–36.

15 Examples of this type of use of 3D are *Bwana Devil* (Arch Oboler, 1952), *The Charge at Feather River* (Gordon Douglas, 1953), *The Nebraskan* (Fred F. Sears, 1953), *House of Wax* (Andre DeToth, 1953), *Creature from the Black Lagoon* (Jack Arnold, 1954), and *The French Line* (Lloyd Bacon, 1954).

16 Hitchcock's interest in long shots had already been already apparent in *Rope* (1948), a film that is (almost) completely accomplished without editing. This film was also

is adapted to this arrangement in a formidable way. It develops not so much between characters but results from the strained, charged atmosphere of the rooms themselves.

Hitchcock achieves this building of tension with a unique focus on the relationship between foreground and background. This can be seen, for example, in a long shot showing a dialogue between Tony Wendice and Charles Swann. It shows an image layout that places a rather unimportant element, a green lamp, in the extreme foreground. The lamp acts here as a barrier between both characters in the middle ground and simultaneously establishes a vertical separation of the space into several parts. In addition, its position in the foreground creates the effect of depth that, overall, makes the space seem more malleable. However, what is more important is the fact that, with this arrangement, our attention is drawn to what is playing out behind the obvious events, that we are made aware of the movements taking place behind what can easily be recognized in the foreground. Here, the visual effect arises from the tension between the static object in the foreground and the moving action in the area of the image area behind it.

This relationship, however, can also be reversed. In another shot, we see Tony Wendice in the foreground and a few objects in the background. Notable here is the Chinese porcelain figurine, whose function becomes apparent a few moments later. Upon closer inspection, it becomes clear that the statue has changed its position—it now no longer looks to the right edge but to the center of the frame. This is in no way a continuity error (which would have hardly escaped the meticulous interior designer that was Hitchcock) but part of a consistent staging strategy. If one carefully observes the porcelain figurine, one can see that it is always looking exactly where something crucial to the plot is occurring—it points out the events within the space before they even occur. It thus concerns a type of direct gaze into the camera, a reflexive process that is employed both as commentary and as a moment for building tension.

Already in 1947, Sergei Eisenstein had pointed to the unique aesthetic functions of stereoscopic film. Eisenstein understood the new quality of 3D film to be grounded not in technology but in staging, namely the possibility of conceiving of both the foreground and background of the image as

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adapted from a theater play and focused the plot on the limited interior space of an apartment. Unlike *Dial M for Murder*, however, *Rope* is characterized by a highly mobile camera that follows and circles around the characters.

formative elements in their own right: "Every effort is made to differentiate them as much as possible, and to bring them together again in a whole new way—in a reciprocally informed composition."[17] In this context, Eisenstein clearly stresses the fact that such an understanding of space can be traced back to the logic of the stage: "Within the family of the performing arts, stereocinema is to be classed not only with the grand-nephews of Edison's and Lumière's inventions but also somewhere among the great-grandchildren of theatre."[18] With these approaches, the unedited films of early cinema and the reference to the theatrical tradition, Eisenstein touches on those influences that achieve their expressive impact not from editing but from the principle of continuous exhibition. In their discussion of *Dial M for Murder*, Eric Rohmer and Claude Chabrol likewise emphasize the fact that in this film, it is not the art of editing, but the theatrical principle, that guides its construction: "The algebraic formula of the stage play is here given a geometric expression of rare elegance. The point is not so much to split hairs as to make us see things clearly—to see in the way Hitchcock wants us to see."[19] Here it should be noted that this invitation to see things clearly is thanks to a concept of viewing that grants us an open view of the space of action, in other words, that enables us to take in the events in long shots without the image detail being overly altered or distorted. To achieve this viewing arrangement, Hitchcock had a special trench built in front of the set into which the camera was lowered. Like a spectator sitting in the front row of a theater, the camera observed the space in front of it both statically and frontally, and, similar to theater, the variation of framing and camera distance was dispended with. The aspect of the film that generates tension, therefore, does not play out in the combining of images but is already inherent in the singular, long-lasting shot. And here is where Bazin's aesthetic law of non-editing can be applied: "When the essence of a scene demands the simultaneous presence of two or more factors in the action, montage is ruled out."[20]

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17 Sergei Eisenstein, "On Stereocinema (1947)," in *3D Cinema and Beyond*, ed. Dan Adler, Janine Marchessault, and Sanja Obradovic, trans. Sergey Levchin (Bristol: Intellect, 2013), 23.

18 Ibid., 27.

19 Éric Rohmer and Claude Chabrol, *Hitchcock: The First Forty-Four Films*, trans. Stanley Hochman (New York: Ungar, 1979), 121.

20 Bazin, "The Virtues and Limitations of Montage," 50.

If viewers are supposed to look closely, they must be given time to do so; if space is staggered in a complex way, it requires an unobstructed view in order for the viewer to make sense of it. Hitchcock's editing pace explores this configuration and, with it, shows a special sensibility for the aesthetic-narrative potential of stereoscopic cinema. For unlike in two-dimensional film, the illusion of depth here is not organized by the change of the camera position but is accomplished by staggering the depth of the space itself so that the uncut shot enables both a lingering in the space as well as the attentive comprehension of the movements that take place within it. In doing so, it is crucial that Hitchcock does not show important elements in alternation but simultaneously integrates them into the picture. This simultaneous integration does not mean dispensing with editing in the sense of an aesthetic reduction but, quite to the contrary, an increase in complexity, the uncovering of a further playing field, and the exploration of a new dimension of meaning.

3. Digital Cinema

If the heyday of 3D in classical cinema had drawn new attention to the aesthetics of stereoscopy, this broad-based investment was already beginning to abate by the mid-1950s. Still, 3D films did not completely disappear after this time but remained visible in various forms—for example, in the 1960s in the subculture of underground cinema (*The Stewardesses*, Allan Silliphant, 1969), in the 1970s as a Blaxploitation remake (*Wildcat Women*, Stephen Gibson, 1976), in the 1980s in the horror genre (*Rottweiler: The Dogs of Hell*, Worth Keeter, 1982), and in the 1990s as a theme park attraction (*Marvin the Martian in 3D*, Iwerks Entertainment, 1997). However, 3D film experienced a comprehensive upturn only in the course of digitalization. This revitalization of 3D was led by the immense success of James Cameron's *Avatar* (2009), which was followed by a long series of digital 3D productions. This included the 3D animated films from Disney Studios (*Up*, Pete Docter and Bob Peterson, 2009), Pixar (*Toy Story 3*, Lee Unkrich, 2010), and DreamWorks (*Shrek Forever After*, Mike Mitchell, 2010), as well as films from major directors such as Tim Burton (*Alice in Wonderland*, 2009), Steven Spielberg (*The Adventures of Tintin*, 2011), Martin Scorsese (*Hugo*, 2011), and Ang Lee (*Life of Pi*, 2012). In addition to global Hollywood's increased interest in 3D film, European auteurs such as Werner Herzog (*Cave of Forgotten Dreams*, 2010), Wim Wenders (*Pina*, 2011), and Jean-Luc Godard (*Adieu au Langage*, 2014) explored the potential of three-dimension film aesthetics.

The current renaissance of 3D film has been frequently compared to the successful phase of stereoscopy in classical Hollywood cinema in order to predict how long it will last. Thus, prominent 3D critics such as Roger Ebert and Walter Murch accused 3D film of causing too many headaches, having admission prices that are too high, and featuring special effects that do not offer any added value. According to such critics, as with the introduction of television, cinema today is attempting to combat the increasing competition from smaller screens (those of PCs, smartphones, and tablets) with the strategy of outdoing them, and like in the previous 3D boom, the current boom is also nothing more than a helpless attempt by the film industry to augment the spectacular character of the cinematic experience with additional gimmicks.[21] However, the reason for the current assertiveness of digital 3D film has its roots elsewhere, as Thomas Elsaesser argues: "D3D is not (only) a defensive damage-limitation exercise; we are not in the 1950s, where the film industry might have lost the family audience to television."[22] Not only have new processes of digital recording and rendering eliminated numerous deficits in stereoscopic image perception, but also the simultaneous introduction of 3D-capable household electronics is an indication of a broader expansion of the digital three-dimensional image:

> As far as Hollywood goes, D3Dis not treated as a special effect but as a means towards integration and a resetting of default values; its vigorous promotion is not a panic reaction but part of a push towards integrating all platforms and screens, big and small, fixed and mobile."[23] In this respect, one can assume that "that 3-D today should be regarded as part of and symptom for a broader change in our perceptual and sensory default values.[24]

In the transition from established forms to newly evolving forms, the aesthetic conventions of analog cinema have been subjected to an extensive process of transformation that accelerates along with altered visual experiences in the digital age. While the long shot, for example, had once been an exception and an unusual deviation from the dominant logic of editing, nowadays, uncut

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21 Cf. Roger Ebert, "Why I Hate 3D Movies," *Newsweek*, May 9, 2010, and Roger Ebert, "Why 3D Doesn't Work and Never Will. Case Closed," *Chicago Sun-Times*, January 23, 2011.

22 Thomas Elsaesser, "The 'Return' of 3-D: On Some of the Logics and Genealogies of the Image in the Twenty-First Century," *Critical Inquiry* 39 (2013): 221.

23 Ibid., 245.

24 Ibid., 235.

film sequences are far more familiar to us as part of new visual dispositifs. Nicholas Rombes cites, for example, the spread of surveillance technologies as an example of the current visual experience of a continuous shot: "Surveillance cameras and systems—with their endless gaze and deep storage capabilities—constitute an alternate cinema of the neo-liberal, post 9/11 age."[25] The expansion of storage capacities made possible by digitalization provides for the potential extension of recording time. It is no longer limited by the material basis of the analog equipment but is experiencing an extension, a result of which being that stylistic formations are also beginning to change: "Just as the cuts in classical cinema were motivated, in part, by the limits of how long filming could continue before the camera needed to be reloaded, the cuts in digital and HD cinema will evolve into a new grammar at least partially motivated by the fact, that, literally, a film can be shot in one take with no cuts."[26] In actuality, this principle can today already be easily realized by any smartphone user. The numerous uncut amateur films and videos that can be found on YouTube, Vimeo, or other digital platforms show that continuous recording, as an aesthetic phenomenon, has now become a self-evident principle of film production and reception. A further extension, which integrates the continuous gaze into the viewing experience, is being realized by digital computer games. Their worlds of imagery do not unfold as fragmented visual arrangements but are based on uninterrupted movement through three-dimensional space, as Lev Manovich remarks: "Many computer games also obey the aesthetics of continuity in that, in cinematic terms, they are single-takes. They have no cuts. From beginning to end, they present a single, continuous trajectory, through 3D space."[27]

Instructed and inspired by new image forms and viewing experiences, cinema in the digital age no longer remains what and how it once was. Under the influence of a comprehensive media re-organization of perspectival understandings and visual relations, it is reassessing its aesthetic possibilities and, in the process, is changing its forms of narration and expression. Digital 3D is therefore not a new edition of an old attraction value but a cinematic form of reflection of spatiotemporal continuity and fluidity made possible and driven by digital media culture.

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25 Nicholas Rombes, *Cinema in the Digital Age* (London: Wallflower Press, 2009), 38.

26 Ibid., 39.

27 Lev Manovich, *The Language of New Media* (Cambridge: MIT Press, 2001), 142–143.

A notable example of this digital stereoscopic aesthetic is Alfonso Cuarón's *Gravity* (2013). Unlike Hitchcock's *Dial M for Murder*, which refers to geometrically organized spatial structures in order to explore and play them out, this film does not focus on clear-cut spatial separation but on the blurring of transitions. We are no longer dealing with a visual arrangement that enables orientation in space through recognizing its boundaries, but on the contrary, questions them by letting them become permeable. This can already be seen in the film's exposition, an almost 14-minute sequence shot that was achieved without any visible cuts. At first, the dark depths of space are shown, within it the distant outline of Earth, a space shuttle, the Hubble Telescope, and several astronauts. The camera slowly hovers through the space, revolves around the figures and objects, pauses intermittently, moves again, slides from left to right and from right to left, from front to back and from back to front. This diversity of movements is nevertheless developed not as a rapid, rhythmic alternation but as a calm flow, as a constant flux of visual and spatial relations that is only constituted in and by fluid continuity. It is not critical that the viewer comprehends movements within a defined space but, rather, that the space itself becomes mobile. In doing so, its capacity for expansion is spread out in front and behind, above and below. This becomes clear, for example, in a moment in which a small screw comes loose from the outside of the telescope and floats toward the viewer, thus moving from the greatest distance to the nearest proximity, or in another moment in which the hail of space debris begins to diffuse across all lateral boundaries in a comprehensive blasting motion. However, not only the objects but also the characters are subjected to a constant change of position due to the fact that they find themselves in a dimension of movement outside the laws of gravity: they fly forward from the depth of the space or are pushed backward; they remain static or revolve around their own axis; they are shown vertically like bodies standing up or horizontally like bodies lying down.

The film repeatedly illustrates the flexibility of perspectives and the potential for viewing possibilities. We can hardly take in the scenery before its boundaries expand; before we can even make out an order of vertical and horizontal lines, they then turn into a provisional arrangement that is then replaced by another. The film does not structure these arrangements in the form of classic editing, in other words, by stringing together stable and clearly definable shots in which one element necessarily follows the next. Rather, the transitions are always already contained in the image itself in order to develop

there as a process of movement: the space of the image becomes the space of its possibilities.

As a result, viewers also lose their bearings, for the constantly transforming space does not create any definite stability of one's own position. Because the possibilities of spatial orientation are always disappearing, because there are no longer any stable relations, no reliable coordinates that structure the field of view, the viewing situation itself begins to float: it seems to become weightless. It is this visual overshoot that does not leave the viewer distanced and untouched but involves him or her in the image and physically affects him or her. Scott Bukatman sees a unique expansion of self-perception in the visual-aesthetic tradition of simulated zero-gravity: "All the fantasied escapes from gravity […] recall our bodies to us by momentarily allowing us to feel them differently. It is a momentary effect, a temporary high: we are always returned to ourselves. These escapes, however, are more than retreats from an intolerable existence, they are escapes into worlds of renewed possibilities."[28] In the digital age, this transformative capability is further augmented by the potential of the reorganization of all kinetic elements and the possibility of the seamless fusion of previously distinct areas. In this respect, the digital 3D film *Gravity* refers to a perceptive disposition that not only questions the static fixation of the moviegoer but also presents the status of the image in its specifically digital flexibility. Elsaesser has emphasized this new form of pictoriality, which, on the one hand, relates to cinema and, on the other hand, detaches itself from cinema in order to expand its own boundaries. In this way,

> 3-D paradoxically symbolizes the variable properties, uses, and surfaces of what we still call screens, at the same time as it does away with the level horizon, the fixed point of view. It inaugurates instead a floating presence, immaterial and invisible as well as ubiquitous and omnipresent […]. Now the illusion of ubiquity, simultaneity, and omnipresence compensates for being a mere speck in the universe, enmeshed in networks of plotted coordinates, trackable and traceable at every point in space or time and yet suspended in an undulating, mobile, variable inside, to which an outside no longer corresponds.[29]

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28 Scott Bukatman, *Matters of Gravity: Special Effects and Supermen in the 20th Century* (Durham: Duke University Press, 2003), xiii.

29 Elsaesser, "The 'Return' of 3-D": 244–245.

In *Gravity*, references to the changing conditions of digital visuality are constructed in numerous ways. This includes, first of all, a comprehensive topological transformation that makes the image space seem to be detached from all definable scales and measurements. What becomes palpable in this developmental process is the uncertainty of proportions and movement dynamics, which leads to a fluid reconfiguration of previously stable relations. As a result, those preconditions that were defining for the image in analog cinema are subjected to a process of dissolution. It is not just that the distinctions of objective and subjective viewing positions are so smoothly interwoven with each other that the moment of transition remains invisible.[30] Even the differentiation between real and virtual elements is gradually blurred in digital 3D film, even made impossible.[31] In this sense, the liquifying of previously stable oppositions is also extended to each character and object in the film, to the hybrid creatures composed of computer-generated and actually existing

30 There are multiple examples of this type of transgression of perspective in *Gravity*, such as when the camera moves closer and closer from outer space toward the astronaut Ryan Stone, overcoming the edge of her helmet and thus switching from an objective to a subjective perspective. If at first the viewer had perceived the space from an exterior perspective, he or she can now see it through the character's eyes. Cinematographer Emmanuel Lubezki characterizes this form of shot modeling made possible by digital processes as "elastic shots". This refers to "takes that go from very wide shots to medium close-ups, then segue seamlessly into a point-of-view shot, so the viewer is seeing the action through the character's eyes, right down to the glare and reflections on a helmet visor. 'The shot goes from objective to subjective and again widens out to be an objective shot again,' explains Lubezki. 'We use that through the movie a couple of times. It's very immersive and immediate and it makes you really go into the world and the head of the characters.'" Justin Chang, "Alfonso Cuarón's Signature Style Offers Unique Viewing Experience," *Variety*, September 2, 2013, online: https://variety.com/2013/biz/news/alfonso-cuarons-signature-style-offers-unique-viewing-experience-1200596491/.

31 This continuous piecing together of real and digitally generated components can especially be seen in the example of the astronauts' physique: "The technical and aesthetic accomplishments of *Gravity* become all the more impressive when Lubezki reveals that the only real elements in the space exteriors are the actors' faces behind the glass of their helmets. Everything else in the exterior scenes—the spacesuits, the space station, the Earth—is CGI. Similarly, for a scene in which a suit-less Stone appears to float through a spaceship in zero gravity, Bullock was suspended from wires onstage, and her surroundings were created digitally." Benjamin Bergery, "Facing the Void," *American Cinematographer* 94, no. 11 (November 2013), online: https://theasc.com/ac_magazine/November2013/Gravity/page1.html.

components, and thus transgresses and surpasses the indexicality of photographic images.

Digital images sustain a specific quality through the continuity of concretion and abstraction—to the extent that one can still call them "images" at all, as Lorenz Engell remarks: "The structures of visual data already bear the prerequisite and concurrent mark of their could-be-different-ness. This is exactly why the term 'image' here, with digital seeing or with visual data, is misleading. Consequently, the digital image can also no longer be described in terms of the image but only in those of a liquified interval."[32] Therefore, in digital images, there is no longer anything coherent, cohesive, or complete; there are only liquified transitions.

The spatiotemporal fluidity that 3D film has staged since its beginnings and varied in motif alongside technical and aesthetic transformations testifies to a history that places us in relation to continuously expandable image worlds. This history does not solely address cinema's awareness of its own possibilities of flexibility, it above all addresses us. Because what 3D film brings us closer to is the awareness not only of living with images but also of moving with and in them.

32 Lorenz Engell, "Die Liquidation des Intervalls. Zur Entstehung des digitalen Bildes aus Zwischenraum und Zwischenzeit," in *Ausfahrt nach Babylon. Essais und Vorträge zur Kritik der Medienkultur*, ed. Lorenz Engell (Weimar: VDG, 2000), 205.

The (Imaginary) Man of (Hollywood) Cinema
An Encounter with Edgar Morin

The point of departure for the following considerations about the media relationship between humans and cinema is an image, or more precisely: the cover image of the German edition of Edgar Morin's book on film, *The Cinema, or The Imaginary Man*.[1] In this picture, a still from Jean Cocteau's film *Orphée* (1950), we see a man in limbo. This man simultaneously appears incomplete and duplicated. On the one hand, he is not shown in his entirety (only his upper body can be seen); on the other hand, we see both this partial view and its reflection, or in other words, its duplicate. Interestingly, however, the image is upside down. Already here, a demanding visual arrangement appears: an inversion, an altered perspective. One can only see the correct orientation of the photo when the book is turned on its side. It thus becomes clear that the man is lying on the ground, on a sandy surface, at water's edge. His reflection, hazy and unclear, appears on the water's surface.

There are several possible explanations. Could it be that the book has to do with the way human beings relate to cinema as a type of reflexive self-observation? Ultimately, "as a distinctive focus of film theory, the look into the mirror […] can be traced back to the earliest days of moving pictures."[2] Cinema would thus be a medium of self-reflection, a type of image that would enable human beings to (mis)recognize themselves. If we look at the image more closely, however, we then notice that the man is not at all looking at his reflection in the water but somewhere else. Human beings viewing themselves, therefore, does not seem to be the primary theme of the book. Perhaps

1 See Edgar Morin, *Der Mensch und das Kino: Eine anthropologische Untersuchung* (Stuttgart: Ernst Klett, 1958).

2 Thomas Elsaesser and Malte Hagener, *Film Theory: An Introduction through the Senses* (New York: Routledge, 2015), 65.

more interesting is the makeup of the reflected image, the reflection itself. What kind of an image is it anyway? As an image in the water, it is moving around and its contours are unclear. Unlike the image in a static mirror facing someone directly, this reflection is uneven and subject to change. By looking even more closely, we can see, for example, that the image is not only unclear but also made coarser by the drops on the water's surface. The light is not evenly but, rather, unevenly reflected. As a result, the contours are not sharply defined but blurry. The fluid image, therefore, is similar to a reflection but has a different quality.

Nevertheless, this cover image is still a static image. It is not a filmic image, but a film still; it can therefore announce or invoke something filmic, but it is still something quite different. Morin himself pointed out the difference between the photographic and the filmic image. When opening the book, one finds the following hint from Morin: "The photo cannot dissociate its image from its paper or cardboard material backing. The image projected on the screen is dematerialized, impalpable, fleeting."[3] It is this quality of intangibility, ephemerality—and furthermore, fluidity—that will be of interest in the following considerations. Thereby, it is crucial to recognize that the transformations and conversions that the filmic image gains from detaching itself from the fixed nature of static photography are tied to movements in space and time. This is precisely what the new nature of cinema consists of, according to Morin:

> Time has acquired the movable nature of space and space the transformative powers of time. The double transmutation of cinematic time and space has produced a kind of unique symbiotic dimension, where time is incorporated in space, where space is incorporated in time, where 'space moves, changes, turns, dissolves, and recrystallizes,' and where time 'becomes a dimension of space.' […] Space-time, such is the total and unique dimension of a *fluid universe*.[4]

The genuine basis of cinematography exists within this fluidity; the fluid constitutes the medium-specificity of cinema. Cinematography, according to Morin, with reference to Jean Epstein, "represented the universe as a perpetual, mobile continuity, more fluid and agile than directly sensible

3 Edgar Morin, *The Cinema, or The Imaginary Man. An Essay in Sociological Anthropology*, trans. Lorraine Mortimer (Minneapolis: University of Minnesota, 2005), 35.

4 Ibid., 64.

continuity."[5] In other words, it makes something visible and perceptible which would otherwise not be seen or perceived. This particular capability can be traced back to the inception of cinema. Morin stresses: "The Lumière cinematograph already imbued with a certain soul everything at the limit of materiality, visibility, and palpability, precisely at the border of a nature that is fluid, frothy, nebulous, gaseous, or aqueous."[6]

In the early years of cinema, there was smoke, clouds, and waves. What fascinated the film viewers were the living images of life in motion. The most famous example, the primal scene of cinema, is *L'arrivée d'un Train en Gare de La Ciotat* (1896). Here, the new way of viewing does not solely consist of a realistic observation of a scene from everyday life. Rather, it is the continuity and processuality of the movement, its fluidity, that makes the image a moving image. This becomes apparent in the change of proportions (the train approaches from far in the background into the foreground) but also in the diffusion of differences, as well as in the destabilizations of any possibility of differentiation. It is unclear where exactly the motion begins and ends, because, as a continuous image uninterrupted by editing and not split up by any visible marks, the image does not reveal any defined points in time but, rather, the lapsing of time, its continuous being. In the process, options for spatial orientation are also not fixed as static subdivisions but presented as blurry transitions. Thus, smoke from the locomotive causes the background of the picture to seem malleable rather than flat, so that the horizon gradually fades into the undefinable distance.

In actuality, the Lumières repeatedly set in motion the same spatiotemporal fluidity that speaks from this primordial image. A further example, similar in structure and effect, is *Montagnes russes sur l'eau* (1896). Here, too, an object comes at us from the background, it changes in size as it moves through the picture, and distinct possibilities of differentiation are challenged by the mobility of the water, waves, fountains, and splashes. Furthermore, it is of note that the waterslide's direction of movement, unlike with the train in *L'arrivée d'un train en gare de La Ciotat*, is confronted by its opposite. While a boat filled with passengers on the left side of the picture slips down into the lake, another boat without passengers goes up the water ramp to the right. The movement seems to have something incomplete about it; it not only happens fluidly but

5 Ibid.

6 Ibid., 65.

also in a circle. The boats seamlessly glide through the picture: forward and backward, toward the viewer and then away from him.

The Lumières, however, experimented not only with the movement within the image but also with the movement of the image. Another film, *Panorama du Grand Canal Pris d'un Bateau* (1896) illustrates this. As one of the first tracking shots in film history, this miniature shows what it means to set not only the object of the recording, but also the recording device itself, in motion. Here, the camera itself, affixed to the boat, glides through the space—its standpoint fluidly changes and thereby transforms the viewer's movement within the space. In doing this, the camera not only passes by static objects (the buildings and façades, which are visually mobilized by this) but it also captures movements in the picture (such as other boats passing by, which pass by the camera-boat in the opposite direction). To come back to Morin's remark, cinema extends its fluid capabilities to all objects and movements: the small becomes big, the motionless becomes mobile—and vice versa. "Thus things, objects, nature, under the combined influence of rhythm, time, fluidity, camera movement, magnifications, games of shadow and light, gain a new quality."[7]

Yet the human subjects in front of the camera do not remain unaffected by this. They are affected by what cinema does and is—and both as the humans in cinema and the humans of cinema. For Morin, the crucial aspect remains the fact that the human subject in a film does not take on a privileged position as an overriding entity from which everything else can be derived. Like everything that passes through cinema, the human figure also takes on a specific cinematographic form. People in film are not made up of flesh and blood but, rather, light and shadows. In this way, they are similar to everything else around them in a film. The filmic human subject therefore does not preside over this fluid universe but is assimilated into it. Morin writes: "The fluid universe of film supposes unceasing reciprocal transfers between the microcosm man and the macrocosm. Alternately substituting an object for a person is one of the most common processes in the cinema; film derives its most effective results from precisely such transfers."[8] Just as the buildings in *Panorama du Grand Canal Pris d'un Bateau* seem to look at us with their eye-like windows, just as the architecture "plays" along in the film, and as life

7 Ibid., 66.

8 Ibid., 70.

is breathed into its façades, as objects retain a humanlike presence, the human subject can also become a thing. Cinema has even created its own genre-specific scope for these similarities. Comedy, for example, is extensively concerned with the interchangeability of humans and things,[9] and slapstick can certainly be considered one of the earliest cinematographic forms reflecting on this interchangeable relationship.

The example that Morin cites in *The Cinema, or The Imaginary Man* is, however, a different one—*Way Down East* (1920), a melodrama by David Wark Griffith. Morin is not interested in the way in which the human subject (here, Lillian Gish as the film's protagonist) sets the plot in motion. Instead, he observes the way filmic elements and filmic human beings exist in a relationship of mutual correspondence, how they are mutually constituted: "On a drifting sheet of ice, Lillian Gish, an abandoned girl, is swept along […]. Thus the heroine becomes a thing adrift. The thaw becomes an actor."[10] It is clear here that film is ascribed the unique ability to shift the focus from the autonomous human subject and toward the world of things. Gish and the ice floe seem to become one: they are one and the same object, carried away by the torrent. The foundations of Hollywood, then, are not built on man as the nucleus of each narrative, at least not as a cohesive or overriding entity. In early narrative cinema, we can instead detect an interrelationship of exchange: humans stand in relation to others, to other things or humans, to movements, shapes, and elements. The human subject cannot be seen as a peculiarity, nor can he or she be considered as an individual entity.

If we are speaking here of the fact that the human subject of film also stands in relation to other humans, we are already one step ahead. In particular, there are moments where this relation becomes especially noticeable, where it is reconsidered and attention is called to it. One can especially observe those aspects that have always applied to the relationship between human beings and cinema in a film's moments of reflection. Films emphasizing this relationship not only include its core characteristics but make them deliberate and recognizable. The next example, the product of a notable focal point in Hollywood, will illustrate this. But to do this, one must uncover a deeper layer of argumentation from Morin's book on cinema: the relationship between the humans *on* the screen and those *in front of* the screen, or in other

9 Cf. Christiane Voss, "Der dionysische Schalter: Zur generischen Anthropomedialität des Humors," *Zeitschrift für Medien- und Kulturforschung* 1 (2013): 119–120.

10 Morin, *The Cinema*, 71.

words, between character and viewer. Here again, fluidity will play a major role.

But first the example: Billy Wilder's *Sunset Boulevard* (1950). This film contains a prelude that starts with the film's ending, one that interweaves life with death and delves into cinema itself. A murder has occurred in Hollywood. Police cars and news trucks speed down Sunset Boulevard to get to the crime scene, a lavish mansion. Once they arrive, the crowd rushes into the backyard, where the coroner is inspecting the body. A dead man is floating in the pool. Shifting from stasis (a motionless body) to movement (a swimming body), the figure floats within fluidity. The scenery provided to the audience could not be blurrier. This applies both to the audio track and to the visuals. On the audio level, a film-human breaks out of the unity of illusion constancy and addresses the viewer/listener. The dead man in the pool is Joe Gillis, the film's protagonist, who comments on what has happened: "But before you hear it all distorted and blown out of proportion, before those Hollywood columnists get their hands on it, maybe you'd like to hear the facts, the whole truth." By using the personal pronoun "you," the voice directly addresses the people in the audience and draws them into the filmic space; they are not distant from the events onscreen but become part of them.

But what kind of voice is speaking here? It is neither the voice of an external narrator (ultimately the person speaking is part of the narrative ensemble, in other words, integrated into the narrative), nor is it the voice of a person in the plot (since the character it belongs to is no longer living, but dead). The voice is thus neither diegetic nor extradiegetic; it hovers between presence and absence. We hear, but do not see, the character speaking. A little while later, we see the character and hear him speaking, but we do not see the process of speaking. The character is onscreen, but the voice is offscreen. Christian Metz has pointed out this strange hovering in the in-between in the context of his discussion of filmic enunciation. He makes reference to the communicative situation between film and film viewer, which is always being renegotiated in the act of enunciation:

> A free agent by its very nature, the sound-off aspires toward the enunciative target that may be more or less close to the spectator-listener. In this way an autonomous layer of meaning, explicit or confused, is formed, which comes to double the story from time to time, to comment on it, to punctuate, contradict, and explain it, as well as to muddle it. As a result, this marginal layer

> of sound obliges the spectator who wants access to the diegesis to make an always somewhat surprising stop at the semantic *tollbooth*.[11]

We can expand on and complete this observation by considering the visual level of our example. Here, too, we are dealing with a vague in-between, with an oscillating motion that visualizes the image-being of the film-human. A figure is floating in the water. Other figures are bent over looking at it. Here, "the contours not only blur together in the scene, but the actual film image itself seems to liquify in the cross-fade from the pool and be set in motion in its materiality."[12] Everything that we see is subjected to the wavelike motions and to the light breaking through it. This applies to both the oblique sunlight shining through and to the artificial flashing lights of the cameras. Although these light sources are part of the diegetic world they are nevertheless capable of evoking something different, namely the filmic apparatus itself, which is achieved by *Sunset Boulevard*'s mode of narration, both in theme and motif. After all, the film repeatedly addresses and reinforces the specifically filmic relationship between reality and staging. There do not seem to be any "real" people who exist independent of their being an image.

This does not only apply to the level of narrative (Hollywood making references to itself and thereby reflecting (on) itself) but also to the level of reception and, therefore, the relation between the film's actors and viewers. We are thus dealing with two currents that come together in the light of the projection beam: there are no films without the people who watch them. Edgar Morin points out:

> The mind of the spectator performs tremendous, nonstop work, without which a film would be nothing but a Brownian movement on the screen, or at the most a fluttering of twenty-four images per second. Starting from this whirl of lights, two dynamism, two systems of participation, that of the screen and that of the spectator, are exchanged, flow into one another, complete each other and join in a single dynamism. […] The participation that creates the film is created by it.[13]

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11 Christian Metz, *Impersonal Enunciation, or the Place of Film*, trans. Cormak Deane (New York: Columbia University Press 2016), 45.

12 Franziska Heller, *Filmästhetik des Fluiden: Strömungen des Erzählens von Vigo bis Tarkowskij, von Huston bis Cameron* (Munich: Fink, 2010), 250.

13 Morin, *The Cinema*, 201.

The man of cinema, according to Morin, is neither truly real nor purely imaginary; he is always both at the same time. When a human being watches a film, his humanness is wholly focused on this cinema-specific watching—he is then more of a cinema-man than a purely real human. And when a human being appears as an image onscreen, this existence is then imaginary but also not completely detached from the real human, whose photochemically produced image is projected onscreen in cinema. Lorenz Engell has pointed out this connection: "A humanness that is no longer truly real and a humanness that is not yet completely imaginary meet halfway, and it is the visual faculty that binds them together. Morin calls this the typical 'semi-imaginary man' of cinema."[14] In *Sunset Boulevard*, this relation comes to the fore, since this film is an example of the way cinema makes images that allow the relationship between viewing and projected humans to unfold in the process of becoming an image. "The film thus observes that which cinema, of which it is a part, itself achieves; the 'semi-imaginary man' is a vision of film from cinema itself."[15]

But this vision is not the rule. Rather, it is a highly conspicuous pictorial construction, far more conspicuous than most of the other images of human beings that Hollywood has produced. This is, also and especially so, because it arose from a turning point in cinematic history, one at which Hollywood cinema was beginning to consider its own history and foundations. In the 1950s, Hollywood experienced one of its largest shocks since its inception, a pervasive crisis that was essentially connected to competition with a different audiovisual medium. Television had found its way into people's homes and created totally new images there—images that caused cinema to look at its own images in newt ways. In times of crisis, Hollywood cinema tends to develop a particular sense of reflection, especially at moments when the faculty of seeing itself looks back at onto itself. Two further examples will be mentioned here—as opportunities to explore the compatibility of Morin's thoughts on cinema beyond the time period of their own development.

The first example is a part of New Hollywood and is even generally considered its starting point: Mike Nichols' *The Graduate* (1967). At a time when the old studio system was in the process of disintegration, film aesthetic experiments that left behind tried and tested, familiar techniques became possible in Hollywood, experiments that aimed to expand and elaborate on the limits

14 Lorenz Engell, "Solange es Menschen gibt: Kinematographische Anthropologie," *Münchener Film-Vorlesungen*, (Konstanz: UVK, 2010), 71.

15 Ibid., 73.

of what could be depicted and narrated onscreen. New Hollywood cinema is concerned with formal breaks in characterization as well as in attempts to redesign the acting, or even non-acting, human subject. This includes Benjamin Braddock, the aimless protagonist of *The Graduate*. However, here it is not so much his status as an antihero that comes out but, rather, the moment at which the character's subjectivity transforms into something else, a type of liquification of perception. The fluid once again comes into play.

On the occasion of his college graduation, a transition from one life into another, Benjamin Braddock receives a special present from his parents: diving equipment, complete with a neoprene suit, flippers, diving goggles, and a harpoon. This underwater gear is meant to be presented to him at a garden party at Benjamin's parents' house. At the party, his father announces his son's entrance as a kind of special attraction: "A feature attraction that will be one of the most astounding events ever to take place in this particular backyard!" Benjamin's helpless pleas to remove himself from this painful performance are barely audible during this announcement because they resonate from a space outside of the picture. As soon as Benjamin leaves this outer space, or in other words, walks from offscreen onscreen, he is presented as both human and non-human at the same time. Sealed up in the diving suit he appears as something foreign, enclosed in an artificial casing, which reorganizes both his outside as well as his modes of articulation. For example, his movements are transformed by the flippers (walking on dry land with them is difficult and clumsy), but furthermore also his perceptions. The film illustrates this transformation when it switches to a subjective viewpoint. The image now consists of the oval cutout of the goggles; the sound is completely enveloped by the deep breathing sounds coming from the diving gear. Ben is thus separated not only from view but also from outside sounds. This is followed by a leap into another space—the space of the pool, the world of water.

From a space of the secure, the structured, something transforms into the vague, the blurry. Suddenly, every possibility of spatial orientation has disappeared. Suddenly, there are no reliable relationships anymore, no coordinates that structure the field of vision. One could turn the picture any which way: where above and below, left and right, are now, is no longer discernible, all relations become blurred. As a result, viewers lose their footing, since the pool's water space makes any stable positioning impossible. Diving into the water undermines a clear view of the events. It is primarily the reflections of light that cause a constant visual restlessness and bring about various conditions of the visible. Furthermore, the moment of submersion is

complemented throughout by the glimpses under water and through the water's surface, which makes the liquification of perception discernable. Gilles Deleuze has pointed out the fact that cinema found in water "the promise or implication of another state of perception: a more than human perception, a perception not tailored to solids, which no longer had the solid as object, as condition, as milieu. A more delicate and vaster perception."[16] In the process, the liquification of perception, the fluidity of seeing, shows its specifically cinematographic achievement by drawing the eye away from stable or defined forms. Rather, the fluid universe of film probes the dissolution of stabilization in order to thereby make another type of perception available to its viewers.

What is remarkable about the example of *The Graduate* is that the moment of diving, as well as the process of a transformation of perception initiated with and by it, is made part of the picture, indeed itself begins to move within the picture. This moment is in some places bound to a character's subjective perspective but then detaches itself from it again. Thus, even more so than in *Sunset Boulevard*, a fluid transition between the outside view and the disengagement from it takes place; that which frames the coherent whole is itself called into question here. It stands to reason that this process of dunking should be connected to a changing perceptive disposition, one that cinema has cultivated as its dream since its beginnings: that of immersion. Here there is already an etymological connection between immersion and the scene in question, since the Latin word *immersio* refers to the process of diving into a liquid. What Edgar Morin introduces as the "fluid universe" of cinema and describes as its specific characteristic (both on the level of the relationships of elements in the images as well as on the level of the relationship between humans onscreen and in front of the screen) can be drawn out further in the form of a question directed toward the changing media conditions of cinema. In any case, Morin himself anticipates this by addressing the vision of "*the total cinema*"[17]—a cinema, therefore, that is augmented, and expanded in order to exceed its own perception-specific boundaries. In doing so, he mentions the introduction of sound, color, widescreen—and also stereoscopy.[18] Put more precisely, he hints at the latter rather than discussing it broadly,

16 Gilles Deleuze, *Cinema 1: The Movement-Image*, trans. Hugh Tomlinson and Barbara Habberjam (Minneapolis: University of Minnesota Press, 1997), 80.

17 Morin, *The Cinema*, 41.

18 Cf. ibid., 139–140.

but it at least interests him to the extent that he ascribes it a unique potential for future development: "Our most elementary requirements […] are the luxuries of yesterday."[19] Therefore, what appears at first as a gimmicky addition or a luxurious attachment at the moment of its emergence, together with the viewer's changing experiences in perception, becomes an integrative, indeed necessary, component of filmic experience. Could it be, then, that Morin's brief reference to spatial immersion in cinema has since been redeemed, that the emergence of the image from its frame is also reshaping the constitution of the man of cinema (or more precisely: the semi-imaginary man of cinema)?

There are several clues for this process of reshaping when regarding stereoscopy in the context of the development of digital 3D technology. Thomas Elsaesser suggests considering current 3D cinema as an indication of the profound transformation of visual perception: "Hence, what is being promoted with 3-D is not a special effect as special effect but as the new default value of digital vision, presuming a layered, material, yet also mobile and pliable space. […] As the default value of postpictorial spatial vision and in-depth sensation in the digital age, 3-D would be retooling the semantics of embodied perception."[20] The digital 3D film *Life of Pi* (Ang Lee, 2012) will serve here as an example of an expanded fluid universe. In this film, the swimming pool and the sea are not simply motifs of the moving, reflecting water; here, they become the space of immersion that spills over the edges of the screen and are thereby capable of pulling us all the more deeply into its undertow. Ang Lee's maritime adventure suspends all limitations and points of orientation, not only in terms of left and right but also in terms of forwards and backwards, above and below. The reflections of the water in the sky and the sky in the water are voluminous cross-fades and relief-like reflections simultaneously: both appear to be not transparent surfaces but, rather, their own dimensions of spatial diffusion. Furthermore, the experience of time also becomes fluid: it is no longer chronologically organized or aligned strictly in a linear way. One does not necessarily follow the other and is no longer its prerequisite or precondition. The coherence-building consistency knows no final termination; it borders have become permeable and, therefore, open for diverse currents to flow through. Ultimately, this blurring of fixed opposites extends to every

19 Ibid., 142.

20 Thomas Elsaesser, "The 'Return' of 3-D: On Some of the Logics and Genealogies of the Image in the Twenty-First Century," *Critical Inquiry* 39 (2013): 240.

entity in the film, to its characters and objects. In *Life of Pi*, a live-action actor fights with a virtual tiger. Thus, we have a digitally generated tiger as the representative of a species without reference, a ghostlike creature that exists completely detached from the indexicality of photographic images—yet still interacts with them.

Digital images, therefore, do in fact have a lot to do with liquification—to the extent that one can even call them images, as Lorenz Engell reminds us:

> Digital images can no longer be described in terms of presence, absence, or representation. While photography must be thought of as always built upon the image, the plane, or the frame, and film as built upon shots and editing, one must now think of the digital image as a crystallized image of fluidity, in the sense of an uninterrupted stream that constantly transforms an image. […] The structures of visual data already bear the prerequisite and concurrent mark of their could-be-different-ness. This is exactly why the term 'image' here, with digital seeing or with visual data, is misleading. Consequently, the digital image can also no longer be described in terms of the image but only in those of a liquified interval.[21]

In digital images, there is no longer anything contiguous, coherent, or complete; there are only fluid transitions. Perhaps they are, to ultimately go back to Morin, the new fluid universe; perhaps their wavelike movements make up our need for the image today. And perhaps this is the reason why they lead us back to our own humanness. "It is in fact," according to Morin, "because it is an anthropological mirror that cinema necessarily reflects practical and imaginary realities, that is, the needs, communications, and problems of the human individuality of its century."[22] We still always have cinema, and we still always need cinema. For it is not only the place that offers us a reflection of ourselves. Rather, it is the place where seeing sees itself. To conceive of this seeing as something fluid, something moving and changing within itself, and to further understand our imaginative capabilities not as something clearly fixed, but as something blurry in its transitions—this is what cinema can teach us.

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21 Lorenz Engell, *Ausfahrt nach Babylon: Essais und Vorträge zur Kritik der Medienkultur* (Weimar: VDG, 2000), 204–205.

22 Morin, *The Cinema*, 212.

Back to the Beginning
Wim Wenders' *Pina* and the Spatial Aesthetics of 3D Cinema

Wim Wenders' *Pina* (2011) is, in many ways, a first. It is the first film that the director realized in 3D and the first 3D documentary feature nominated for an Academy Award. Beyond that, however, the film also points to other beginnings and primordial principles, namely the question of what the stereoscopic image has to do with our understanding of vision, or, even more fundamentally, how cinema can teach us to see.

This question is by no means a new one. It has been inherent in cinematography since its infancy and has accompanied each cinematographic development stage ever since. In his essay "The Myth of Total Cinema," André Bazin points to an approach that highlights the stereoscopic understanding of space as the actual catalyst for the emergence of cinema: "As for the latter, the film historian P. Potoniée has even felt justified in maintaining that it was not the discovery of photography but of stereoscopy […] that opened the eyes of the researchers."[1] Bazin's reference suggests that the spatial knowledge of stereoscopy not only preceded cinema historically but also decisively influenced and shaped its image forms. Since their introduction in the mid-nineteenth century, stereoscopic images enjoyed enormous popularity. For example, stereo photos and stereo slides for home use were widespread; in addition, there were devices for collective viewing in public areas. The spatial illusion of depth made possible by these devices was a central component of the visual culture of the nineteenth century, and, in this way, "the immense

1 André Bazin, "The Myth of Total Cinema," in *What is Cinema?*, trans. Hugh Gray (Berkeley: University of California Press, 1967), 20.

popularity of stereoscopy undoubtedly contributed to the development of a historically distinct horizon of expectations for early cinema."[2]

Although stereoscopic vision was intrinsic to photography and the moving image from the very start, 3D film productions have remained on the periphery of film history. However, we know that both the Lumière brothers and Edwin S. Porter were already experimenting with stereoscopic processes in the 1910s. There are also examples from later decades, such as *The Power of Love* (Harry K. Fairell, 1922), which debuted in the 1920s as the first feature-length 3D film, *Nozze vagabonde* (Guido Brignone, 1936) in the 1930s, which was the first 3D film with sound, and the first 3D color film, *Robinson Crusoe* (Aleksandr Andriyevsky, 1947), in the 1940s. Each film, however, was an isolated endeavor that did not lead to any further investment of stereoscopic films. 3D film first experienced a decisive upswing only in the 1950s in Hollywood—but even there, its "golden age" was short-lived. This era effectively lasted only three years (1952–1954) and focused on genre productions, such as adventure and horror films, which used 3D techniques as a short-lived attraction value.[3] After this short boom, the interest in 3D was already waning by the mid-1950s, and stereoscopic films became a niche product.[4] In this sense, then, the question of what a 3D film has to do to make us see in new ways seems to be completely justified even in the year 2011. When asked this question, Wim Wenders responded in an interview as follows:

> 3D: I think that this technology has completely gotten up on the wrong side of the bed. All of these action and blockbuster films have given people a false impression of it. They all have the impression that this technique is only there to add more special effects and make a lot of noise so that everything really blows up in your face. In animated films, it's really not that different either; they're all more like rollercoaster rides. And of course, it has its own

2 Michael Wedel, *Filmgeschichte als Krisengeschichte. Schnitte und Spuren durch den deutschen Film* (Bielefeld: transcript, 2011), 72.

3 Examples of this type of attraction-based use of 3D are *Bwana Devil* (Arch Oboler, 1952), *House of Wax* (André de Toth, 1953), or *Creature from the Black Lagoon* (Jack Arnold, 1954). The only exception to this is *Dial M for Murder* (Alfred Hitchcock, 1953), a film that explores the stereoscopic aspect of space in a far more subtle way. However, even Hitchcock considered this his only experiment with it and did not make any other 3D films.

4 These niches include softcore porn, such as in *The Stewardesses* (Alf Silliman, Jr., 1969), Blaxploitation remakes such as in *Wildcat Woman* (Stephen Gibson, 1976), or attractions in theme parks, such as *Marvin the Martian in 3D* (Iwerks Entertainment, 1997).

> charm, but it gets old after a while. And I thought when I saw the first masterpiece that there's been in a while now, *Avatar*, I thought, this is actually the ideal medium to view our world through. And it was the first film that should make us forget everything else that's come before it and take 3D seriously. And when you actually take it seriously, you see something fantastic. It really allows you to see things in a new way.[5]

It is not difficult to draw a parallel to the beginnings of cinema from these remarks. Spectacle, action, effects: Just like the early cinema of attractions, according to Wenders, 3D film is still in its infancy at the dawn of the digital age. Rollercoaster rides—both today and back then—rely on overwhelming, rather than expanding, the view. In order to track down a new dimension of perception, a particular pioneering spirit is needed, even more: a study of space that conceives of 3D technology not as a supplemental, but as a generative principle. Only when the logic of special effects has been disrupted will the new medium, together with its specific possibilities of representation and staging, be properly understood.

With these remarks, Wenders is calling for nothing less than the search for a new formal language. Indeed, the production process of *Pina* is reminiscent of experiments by the first filmmakers—trial and error included. Although an experienced director, Wenders approaches the new technology with the enthusiasm of a novice that puts all cinematic craft knowledge aside—precisely because they are useless here in such a new, different type of filmmaking. For example, the setups of digital 3D equipment are similarly monstrous and heavy as the first film cameras, and the impossibility of easily looking through the viewfinder or at the monitor screen resembles that of early cinema. The fact that 3D filmmaking follows its own laws became quickly and painfully obvious, as Wenders explains:

> The first test shots were appalling. We quickly realized: all the sources of error from 2D film multiply to 3D. For example, when panning with dancers on stage, it can quickly happen that the image stroboscopes, i.e. jerks around unnaturally. With 2D, you know how to avoid that: You have to pan slower. On 3D, it didn't seem avoidable at all. Every fast arm movement of a dancer produced the impression as if you saw two, three, or four arms for a fraction of a second. Film doesn't reproduce every movement on the screen smoothly,

5 "Regisseur und Autor Wim Wenders über *Pina* und das Potential von stereoskopischem 3D," *Beyond Festival*, http://2011.beyond-festival.com/de/media/index.html.

> but we've practically gotten into the habit of not noticing it. Only in 3D, every optical flaw was suddenly visible in big and bold letters.[6]

The tentative moments of uncertainty, the new understanding of the problems of motion blur, for example, or the departure from the aesthetic conventions of highly mobile cameras, make up the stylistic principles of *Pina*. In fact, the various approaches of these new beginnings in filmmaking are not only invoked by the film but also reflected through its technology. The aesthetics of the beginnings do not precede the images, they only become virulent through them.

This can be seen, for example, in the numerous references to the relationship between viewing space and staging space, as well as in the conditions of perspective and understandings of perception inherent in them. Right at the beginning of the film, Wenders shows the unfolding of 3D space—not as a sudden surprise effect but as a processual development to which our gaze gradually becomes accustomed. One of the first shots presents the empty stage of the Tanztheater Wuppertal. We see the entire architectural construction of a classical proscenium stage: in the front, the first rows of audience seats, in the middle, the stage floor complete with the left and right partitions, in the back, the enclosing back panel. Shortly after this, the setup of the dancefloor is shown, as sand is poured out and spread around on the stage floor. The position of the camera has now slightly changed: it has moved a bit closer to the stage. Now, the stage ramp is still visible in the shot but not the first few rows of seats. In the next sequence, which shows a performance of Pina Bausch's choreography for *The Rite of Spring*, the camera has gotten so close that we, the viewers, feel as if we are a part of the action. We are now no longer in front of the stage but onstage; we now no longer merely perceive the space of the stage but share it with the dancers. All boundaries have disappeared, and all of the lines of orientation have been swallowed up: it is no longer possible to tell where the stage ends and the picture begins, where the horizontal and vertical lines might find their boundary: freed from confinement, the space seems to stretch in all directions and extend into infinity. Furthermore, we see both the foreground as well as the middle and background with a sharpness that seems to dissolve conventional perspective relations. Nothing in the distance becomes blurry; everything remains in focus. We can

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6 "Filmisches Neuland. Interview mit Wim Wenders," http://www.pina-film.de/de/ueber-3D.html.

simultaneously, in one and the same moment, experience everything playing out upstage, centerstage, and downstage.

Wim Wenders' aesthetic approach explores this specific arrangement and thereby shows a particular sensibility for the potential of stereoscopic cinema. Unlike in two-dimensional film, the illusion of depth here is not caused by the change of camera position but achieved by the layering of the depth scale, which makes possible both lingering on the stage itself as well as attentive contemplation of the movements occurring on it. The decisive factor here is that Wenders does not show the elements central to the action in alternation, but integrates them simultaneously into the image. Thus, it is not a matter of forgoing something, in the sense of an aesthetic reduction, but, contrarily, of increasing the complexity—of uncovering a further playing field within which to experiment with a new dimension of perception.

Pina is characterized by a basic conception that does not assume a flat image but, rather, the open volume of a box-shaped stage. This principle, however, is not only utilized but also revealed as a technique of illusion in its own right. This can be seen, for example, when two dancers from Bausch's ensemble look at the stage model for *Café Müller*. The fact that this is not a framed flat image but a diorama becomes obvious when the dancer stretches his arm into the model. This intervention into the image space is then complemented by a change in perspective, from a full-frontal shot to an elevated shot: the dancer's hand can now be seen pushing the miniature props back and forth. After initially breaking up the illusion, Wenders reconstitutes it again in the next instant. The two dancers look into the miniature model—and suddenly see a performance of *Café Müller* there, complete with living, lithely moving dancers. All at once, the moving image has nestled itself into the static model in order to create an interlacing: a mini-3D film inside a 3D film. This film trick is old, very old: it has been around since Georges Meliès' basic camera tricks of the 1890s. But even so, this simple play with illusion techniques has its own particular magic. As if by magic, spaces can be constructed and suddenly made to disappear, can overlap one another, be reflected in one another, and change into each other: our eyes gladly allow themselves—even still today, and perhaps even more—to be deceived.

The question of which stages to play on and which spaces open themselves up through these in the process is, for Wenders, not a question of a cohesive event but of open play. This becomes especially clear in such moments when the dancers are not performing in specially designed stage scenarios but act in preexisting location settings. The dancers repeatedly leave the clearly marked

area of the theater in order to look for other locations to perform: a factory, a swimming pool, or a glass house in the middle of the woods. This results in a mirroring interchangeability of inside and outside: any location can become a stage, any cityscape can become a site for a dance routine. On the one hand, these are actually existing places, but on the other hand, they are also tableaus composed as if designed for a film, which clearly emphasizes the stage-like quality of the three-dimensional image space.

Therefore, it is noteworthy how in these cases, Wenders clearly assumes the coherence of an image's composition, or in other words, his intention to define spaces of portrayal and spaces of action as visually determinable proportions and units. What is critical here is the fact that the image is structured by horizontal and vertical lines, which cause its essential elements and their relations to each other to be conceived of as a whole. All of the examples mentioned here are characterized by a gridding that emphasizes the geometric composition of its elements in space. This is seen alternatively in the merging vanishing lines in the background, which extend the depth of the space (such as in the factory and the glass house, where the grid is realized with iron struts, pipes, and shadows), or in shapes that clearly emphasize the tripartite division of foreground, middle ground, and background (such as in the swimming pool, where the various materials are employed as means of delimitation: tiles for the front part, which function like a stage ramp, water for the middle ground, and glass for the back wall as an enclosing surface).

However, the images only become truly expressive through a further dimension, that is, the dimension of time. The intertwining of spatial depth and temporal continuity evokes a sense of reality that extends beyond the representational capability of the static, flat image. This impression of reality is heightened by conveying a feeling of candidness and limitlessness. Every gesture can give rise to another, every movement can take on a new form. Wenders supports and emphasizes these fluid possibilities of unfolding movement in that the camera registers more than it stages. This is accomplished by forgoing fast editing and opting for long, static shots which allow us to observe a multitude of movements in their full execution.

André Bazin was already pointing to this specific disposition of perception by the 1950s. Bazin's argument against editing as a fundamental film-stylistic element focuses on the basic ability of cinema to make time perceptible as a continuum. For Bazin, film is a medium of time whose particular strength is the ability to present the continuous flow of time as a cohesive whole. Contrarily, editing breaks up and destroys this unity of the passage of time, since

"[t]he expression of concrete duration conflicts with the abstract time of montage."[7] Along with the ability to experience a temporal duration, Bazin notes a further advantage to the unedited, uninterrupted shot. This benefit is connected to the depth of field, a process that Bazin especially values because of how it reinforces the viewer's intellectual involvement. Depth of field, in particular, assumes "a more active mental attitude on the part of the spectator and a more positive contribution on his part to the action in progress. While analytical montage only calls for him to follow his guide, to let his attention follow along smoothly with that of the director who will choose what he should see, here he is called upon to exercise at least a minimum of personal choice."[8] Everything that the filmic image can contain as far as complexity is retained in the long, deep-focused shot. In this way, it challenges the viewer himself to move within the image space in order to explore its ambiguity and complexity.

In Wim Wenders' work, this time-based compositional technique is clearly demonstrable. However, it is modified and extended by the fact that the image spaces seem to continuously detach themselves from their representational logic. A brief example from *Pina* will serve to clarify this point. It involves a scene on an escalator filmed with a static camera in a single continuous shot. Again, we see an extremely geometrically organized image composition. The boxy quality of the space of the escalator is emphasized by strict ordering lines. Particularly striking here is how the diagonal lines are organized around a linear perspective, which seems to draw us in from the foreground into the depth of the space. In addition, the rectangular, shaft-like frame constructions of the steel struts bolster the impression of a constantly expanding tunnel being pulled into the distance. But the whole thing only becomes truly complex with the opposing movements that take place in the image space. While the escalator presents a steady, flowing movement into the depth of the space, the dancer at first moves up the steps, or in other words, dances into the foreground. At first, he comes at the viewer but then speeds up his movements in a way that makes him seem to be dancing in place. He then ultimately gets so slow that he disappears into the distance with the escalator and thus moves away from us again. The

7 André Bazin, "The Virtues and Limitations of Montage," in *What is Cinema?*, trans. Hugh Gray (Berkeley: University of California Press, 2005), 52.

8 André Bazin, "The Evolution of the Language of Cinema," in *What is Cinema?*, trans. Hugh Gray (Berkeley: University of California Press, 2005), 35–36.

escalator scene, therefore, features an astounding complexity of forward and backward motion, of statics and kinetics, of stable spatial structures and gliding dance moves, of rigid lines and the dissolution thereof. Every element here seems to simultaneously encounter its opposite: the straight encounters the zigzag, the solid frame construction encounters the soft lines of clouds in the evening sky, the dancer's front side meets his back side after having turned around, and his almost floating dancing toward the front encounters the same dancing into the background.

It is this simultaneity, this particular fluidity of space and time, that makes Wim Wenders' *Pina* into a 3D film that genuinely renews our way of seeing. In effect, it raises nothing less than the question of how current cinema relates to a continually expanding world of images. Thomas Elsaesser stresses:

> If one thinks of 3-D not as part of a cinema of attractions, not as startling you or throwing things at you from the depth of space, but as the vanguard of a new cinema of narrative integration, introducing the malleability, scalability, fluidity, or curvature of digital images into audiovisual space—doing away with horizons, suspending vanishing points, seamlessly varying distance, *unchaining* the camera and transporting the observer—then the aesthetic possibilities are by no means limited to telling a silly story, suitable only for kids hungry for superheroes, action toys, or sci-fi fantasies.[9]

Digital 3D films don't have to be direct successors to spectacle cinema, as Wenders shows. His exploration of space does not assume artificially generated worlds but the space of our everyday experience that we need to rediscover. Wim Wenders' 3D film *Pina* thus does not only address cinema's awareness of its own possibilities of flexibility—it addresses, above all, us as viewers. Because 3D films raise our awareness not only of living with images but also of moving with and within them.

9 Thomas Elsaesser, "The 'Return' of 3-D: On Some of the Logics and Genealogies of the Image in the Twenty-First Century," *Critical Inquiry* 39 (2013): 237.

Scars and Screens
Nip/Tuck

1. "Make me..."

Already through its title sequence, the television series *Nip/Tuck* (Ryan Murphy, 2003–2010) presents its central concerns in a remarkable aesthetic density. The first shot of the title sequence shows a white hand that is drawing a dashed red line against a white background. This marking continues in the next shot in order to separate the image into two halves: on both sides, two artificial bodies can now be seen. The series logo appears and, with it, a change occurs. If at first the images evoked the impression of an aesthetic symmetry with their assembly of identical bodies, a slight variation now becomes apparent: for a brief moment, the hand of the right body twitches, distinguishing it in this brief moment from the motionless body on the left. Following this, the red line is seen again, marking the lower thoracic region as the area to be operated on. The next shot shows a view of uniform mannequins in half-opened cardboard boxes. Not only the mannequins but their packages as well are identified as serial products: a stack of additional boxes with the same labels and markings can be seen behind the first row. This is followed by a close-up of a mannequin's face, which suddenly opens its eyes. At the same time this movement occurs, another transformation takes place. The background switches from a flat, gray tinge to an outdoor scene: a blue sky with white clouds, and a row of buildings with palm trees become discernible. In the foreground, the mannequin can be seen again, and it too moves its eyes, even if hardly noticeable, by briefly changing its line of vision from left to right. The last shot ultimately brings back the red line: it moves up along the neck on a mannequin. Here, too, a transformation takes place: the white of the face becomes a soft pink skin tone, and the lips turn red. As a final piece

of information, the credit "Created by / Ryan Murphy" is superimposed on the image.

In only 45 seconds, the title sequence develops a complex network of relations. Along with the level of the visual, the level of acoustics also contributes to the elaboration of basic aesthetic elements. The title song, "A Perfect Lie" by Engine Room, consists of synthetically produced arrangements that are accompanied by a female voice singing the lines: "Make me / beautiful / Make me / a perfect soul / a perfect mind / a perfect face / a perfect lie". The lyrics' part "Make me," emphasized through repetition, presents a core statement, pointing to the processuality of transformation. It does not focus on what is finished but what is still left to finish; not the result of, but the process of transformation becomes the point of interest. Moreover, the relation to the unfinished is shown in the reference to fragments. Not a single shot shows the body as a whole; it is exclusively presented in partial views. This applies to, on the one hand, the choice of framing, but on the other hand, it also concerns the fragmentation of the body itself. The shot of the warehouse, for example, reveals that the mannequins in the cardboard boxes are missing their limbs: only heads and torsos are sticking out of the packages; arms and legs are severed.

In addition, the red line indicates that the idea of a closed whole can always only be provisional. Already split up itself (namely by being a dashed line), it spreads across the body and the image in order to generate and display separations. This aesthetic element also characterizes the text overlays in the title sequence, where the splitting up is continually demonstrated by a slash mark. Even the title of the series, *Nip/Tuck*, itself contains this dividing slash; furthermore, it appears in the opening credits, a slash separating each actor's first and last name. As a striking symbol throughout, the slash points to a type of cutting and fragmentation that not only characterizes the theme of the series but also its medium: television itself has no concept of an enclosed whole, as it only ever presents sections and segments. John Ellis refers to the segment as the basic element of television, as its essential medial component. Everything that television shows is created and sustained by segmentation. This principle is nowhere more evident than in the series, which, precisely for this reason, is a unique reflexive form of the televisual: "The seg-

ment as the basic unit according to a short burst of attention is matched by the serial and series form."[1]

The opening credits of *Nip/Tuck* present not only the result but also the procedure of segmentation. The slash mark posits a type of cutting that reflects both surgical and visual operations. Notably, however, this process is not fully executed but only hinted at. Instead of the clarity of the conclusion, the inexactitude of the in-between begins to emerge. Here, too, the specificity of television as a medium comes into play. Lorenz Engell notes: "There is no cutting in television; television works with permanent transitioning."[2] Unlike film, whose procedures of editing work to mark clear-cut beginnings and endings, television is not dealing with clear separations, but with blurrings and transitions. This applies to both its programmatic form, characterized by the flow of television programs into one another, and its aesthetic form, which, in turn, is capable of stylistically marking the flow of images[3]. This can clearly be seen in the title sequence of *Nip/Tuck*. There is no cutting from image to image, but rather constant cross-fading. Flowing, continuous transitions are shown rather than stable forms distinguishable from one another. The image appears not as a composition of individual parts but as an amalgamation based on a mixing ratio. Thus, what this intro at first evokes as the act of separating is immediately translated into the mode of connection: a shift from cutting to overlapping.

The process of overlapping and overlaying continues to emerge in close correspondence to the body, whose visualization and staging is the focal point of *Nip/Tuck*. Central to the representation of the body is the relationship between 'artificial and natural', which the series presents as unbalanced from the very beginning. Already the first shot of the title sequence points to a layering of materials that demonstrates the close connection between physical and synthetic substances. The hand drawing the line does not show its organic

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1 John Ellis, "Broadcast TV as cultural form," in *Visible Fictions: Cinema – Television – Video*, (New York: Routledge, 1992), 116.

2 Lorenz Engell, "Fernsehen mit Gilles Deleuze," in *Der Film bei Deleuze. Le cinéma selon Deleuze*, ed. Oliver Fahle and Lorenz Engell (Weimar/Paris: Verlag der Bauhaus-Universität/Presses de la Sorbonne nouvelle, 1999), 478.

3 Raymond Williams emphasizes: "In all developed broadcasting systems the characteristic organisation, and therefore the characteristic experience, is one of sequence or flow. This phenomenon of planned flow, is then perhaps the defining characteristic of broadcasting, simultaneously as a technology and as a cultural form." Cf. Raymond Williams, *Television. Technology and Cultural Form*, (London: Routledge, 2004), 80.

surface but conceals it under the tight-fitting latex of a surgical glove: cover upon cover, layer upon layer. In addition, the artificial mannequins stand out, which increasingly seem to be alive. Here, too, a surface is covered with another but, this time, in a reverse layering. While at first, a colored hand disappears under a white glove, a white mannequin head is then overlaid with a skin-colored hue. Animate and inanimate, mobile and immobile appear to confront one another in a constant process of exchange and approach ambiguity: authenticity and artificiality do not exclude one another, they imply one another.

The various forms of transgressing lines that *Nip/Tuck* negotiates are concentrated and condensed into its opening credits. These manifest in an aesthetic cluster that reveals the core theme to be a medium-specific form of reflection. With this, it becomes clear that the question of transformation does not solely apply to the intradiegetic universe of the series (in actuality, neither the characters involved nor their relationships to one another are shown in the intro) but also, and above all, to television itself. The series therefore does not only follow the conditions of the medium that constitute it but makes them explicit and recognizable.

2. Revising/Outdoing

"Tell me what you don't like about yourself." This is the sentence that the two plastic surgeons, Sean McNamara and Christian Troy, address to each patient considering an operation at their practice. The structural principle of *Nip/Tuck* involves a succession of case stories: each episode is named after the patient whose treatment it is built around. Additionally, the question asked by the two surgeons at the beginning of each medical consultation points to a space of negotiation that transcends the boundaries of their practice. As a narrative starting point, the series chooses a situation that confronts both doctors with interventions that go beyond the scope of individual medical treatment. Both their private lives and their practice end up in a crisis, and both need to be revised and optimized. In the process, the demand for the best possible design becomes a comprehensive challenge directed less toward an actually attainable goal and more toward constant revisions. Even where there is no obvious defect, what is already there must be reworked and improved.

Thus, for example, Sean's wife, Julia, explains during a morning conversation in the bathroom that she wishes she could undergo a breast augmen-

tation, although her husband points out that her body is in top condition. Parallel to this, the first episode of the series shows Christian's encounter with Kimber, a model and eventual porn star, whose desire for physical optimization shapes their relationship from the very beginning. After spending the first night together, Kimber tells Christian about a bouncer who described her as a "perfect ten." Christian, both her lover and her surgeon, replies to this implication of perfection by saying, "Of course, it takes a lot of discipline and work to get there, to be perfect. If you fix the flaws, you could absolutely be a ten." Surprised that she has not yet reached the highest level of perfection, Kimber asks what she is now, at the moment—to which Christian answers, "You're an eight." But the following declaration, "Even so, you're a very pretty girl, Kimber," is not enough to satisfy her: "I don't want to be pretty. I want to be better. I want to be perfect."

As the episode demonstrates, her current value on the beauty scale can be surpassed; her prospect of attaining the highest point value can be achieved. Christian explains what it would require during a thorough examination and mark-up of the body she wishes to make more beautiful: "Beauty is symmetry. Your right eye is half a millimeter higher than your left. We could properly fix that with a malar augmentation. It's a cheekbone enhancement. I give you botox here and here. That should provide a good lift. You're Irish? That explains the slightly flat boxer nose. We could shave the cartilage, give you the Christy Turlington thing. And the breast could go one size bigger, a low C. And you could finish off with some abdominal lipo." Along with his explanations of the measures needed to improve her beauty, Christian marks the respective areas on Kimber's body with red lipstick. Here, the dividing line of the opening credits appears again, its red dotted marking announcing a transformation to be carried out. Furthermore, the static posture of Kimber's body is reminiscent of the immobile mannequins[4]—under Christians' hands, Kim-

4 This motif of doll-likeness is intensified later on in the series. The episode entitled "Kimber Henry" shows a thematic transition from the suggestion of a doll to its actual fabrication. It depicts the construction of a so-called "real doll,' a sex toy made out of silicone to Kimber's measurements and sold on the mass market over the course of her career as a porn star. This perfectly designed body is so attractive that Sean not only observes it with admiration but also has sexual intercourse with it (cf. *Nip/Tuck* 2:10). The indistinguishability of the individual physique and artificial synthetics is not only addressed in this episode. In another, "Lola Wlodowski," a married couple visits the McNamara/Troy office in order to get their bodies remodeled based on their greatest idols: the plastic dolls, Barbie and Ken (cf. *Nip/Tuck*, 6:08).

ber's body is subjected to an intervention that it, as a static object, is unable to resist with any movements of its own.

Of particular note here is the transition from makeup to makeover. While lipstick is usually used to beautify the skin, here it presents itself as a surgical marker that announces the tearing of the skin. Converted in this way, the lipstick appears simultaneously as a medium of beautification and disfigurement: "Using a cosmetic usually meant to enhance surface glamour, to make a woman appear more beautiful, his [Christian's] artwork literally turns the female body into a grotesque spectacle."[5] The lipstick's red changes from seductive to demanding, in the sense that its line marks the body as deficient, as a material to be mended. The body now seems less like a figure in its own right and more like a cutting template. Kimber's reaction upon seeing herself in the mirror is pure horror: "Am I really this ugly?" But Christian knows how to reassure her: "Don't be upset. Let your shortcomings and flaws fuel you. Let them push you further than you ever thought you could go. When you stop striving for perfection, you might as well be dead."

In *Nip/Tuck*, the desire for perfection is not presented as a dangerous obsession, but as an ideal worth striving for, as a driving force capable of advancing the individual in a desirable, even covetable way. In this context, the assigning of numbers suggests a type of scaling that makes beauty appear both measurable and feasible along definable units. The prerequisite for this is a change of perspective from what has not yet been attained to the attainable. This view is propagated not only by both surgeons but also by two other experts working in their office. Along with McNamara and Troy, the psychologists Santiago and Pendleton advise and take care of patients wanting to undergo surgery. In doing so, they take "basically the same position: a wholehearted devotion to change. A certain notion of change and movement is equated with progress—so the insecure individual is promised future insurance for his or her actions, and the quick and resolute decision to make a supposedly radical innovation is rewarded. Change thus becomes a value in itself."[6]

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5 Kim Akass and Janet McCabe, "A Perfect Lie: Visual (Dis)Pleasures and Policing Femininity in *Nip/Tuck*," in *Makeover Television: Realities Remodelled*, ed. Dana Heller (New York: Bloomsbury, 2007), 120.

6 Michael Cuntz, "Tell me what you don't like about yourself: Hypernormalisierung und Destabilisierung der Normalität in der US-Fernsehserie *Nip/Tuck*," *KultuRRevolution: Zeitschrift für angewandte Diskurstheorie* 53 (2008), 72.

The possibility of transformation is associated with the idea of the new as an aesthetic innovation. In this sense, the program of self-revising renovation seems to have no limits. Although it comes with health risks, surgical intervention proves to be an effective means of self-optimization: it does not appear as a threat to physical integrity but as a catalyst for its perfection. However, such surgical operations are not geared toward the overcoming of a temporary crisis; rather, they set in motion a potentially endless progression of plastic surgery procedures. The point is not that the body becomes beautiful, but that it can always become more beautiful. The program of self-regulation does not focus on a conclusion; it demands perpetual continuation. It is therefore itself already serial since it proceeds sequentially: every intervention implies a follow-up intervention, every step in the direction of perfection demands another one. Precisely because the idea of beauty is not stable but variable, precisely because beauty is not constituted as a constant but as a performance, it can be staged in the mode of constant postponement—as an ideal whose attainability is always already called into question by the possibility of being outdone. In this respect, the realization of the perfect version is the perfect lie that the series' opening credits announce at the beginning of each episode: beauty is a promise that can only ever be broken. The precondition for this is that "the orientation to the measure of the middle is substituted by the orientation toward a boundless ideal of one-upping oneself."[7] No average value is chosen as the starting point of self-regulation but, rather, a flexible zone of attractiveness that is always capable of being augmented. Accordingly, the aim is not to achieve a definable goal, but to fuel the desire to overshoot the mark: the stimulant of optimization is not integral beauty but perpetual beautification.

The loss of mediocrity as an instance of orientation can especially be seen in those characters who elevate being above average to their very principle of existence. As eccentrics, they are concerned with a continuous pushing of boundaries, with a type of outdoing themselves that makes the abandonment of norms and normality the driving force of their own self-perception. The first season presents the character of Mrs. Grubman, whose addiction to plastic surgery makes her into the perfect serial patient. Both the doctors treating her and she herself are aware of her dependency, which cannot and shall not be stopped. Rather, the principle of continuation is carried on from episode to episode and from body part to body part in order to exhibit it as an

7 Ibid., 69.

unfinishable project. Of particular importance here is a movement that conceives of the relationship between "inside" and "outside" not as an immutable congruency but, rather, as a variable benchmark: "Body and identity are no longer an organic wholeness but an ensemble of multiple parts, all of them potentially alterable and modifiable."[8] Here, the disentanglement of "inner core" and "outer shell" is not seen as a destabilizing disintegration. Instead, it appears as a fundamental condition for the possibility of a self-optimizing intervention:

> Fragmentation and objectification of the body is often perceived […] as a disturbing and humbling expression that denies the human qualities possessed by individuals. But, on the other hand, the fragmented and objectified condition of the subject provides a wide frame of agency: the modification of the parts implies the whole transformation of the self, so the superficial, the epidermal, the external, the supplementary becomes meaningful.[9]

Extensions and additions, supplementation and dissolution of boundaries determine the eccentric self as a malleable being: it does not require treatment as if overcoming of a disorder, it requires the surgical procedure as a constituent of its self-construction. In this context, subjectivity appears not as a coherent entity but as a continuous process of production. The practices and procedures that the individual needs for his or her own fabrication can be viewed as an ensemble of various types of processes that gradually generate the self. Michel Foucault speaks of "technologies of the self, which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality."[10]

The patient, Mrs. Grubman, knows better than the doctors treating her that the goal is not to reach an endpoint but to constantly postpone it. When Sean McNamara and Christian Troy try to end the series of plastic surgeries

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8 Isabel Clua Gines: "To Live and Die in Front of a Mirror: From Dandyism to Aesthetic Surgery," in Nip/Tuck: *Television that Gets under Your Skin*, ed. Roz Kaveney and Jennifer Stoy (London: Tauris, 2011), 100.

9 Ibid.

10 Michel Foucault, "Technologies of the Self," in *Technologies of the Self: A Seminar with Michel Foucault*, ed. Luther H. Martin, Huck Gutman, and Patrick H. Hutton (Amherst: The University of Massachusetts Press, 1988), 18.

by bringing up ethical concerns, Mrs. Grubman blackmails the surgeons and thereby forces them to continue her optimizing measures. Her success is consequentially linked to the very process that underlies the act of transforming oneself. A surgical instrument that has been left inside the patient's body becomes evidence of malpractice, and the threat of litigation, complete with a demand for compensation for personal suffering in the tens of millions, forces the doctors to give in to Mrs. Grubman's demands and perform every subsequent operation that she wants without objection or restriction. In a surprising flip of the patient-doctor relationship, the surgeons now appear not as sovereign control bodies but, rather, as executive organs of a demand for increased self-optimization that they themselves can no longer regulate.

Mrs. Grubman's pursuit of physical perfection reveals a view according to which the exterior is not a shell under which the essential lies hidden. Instead, she regards the exterior itself as essential. Even into death and beyond it, working on herself, for Mrs. Grubman, is working on her outer appearance. Shortly before her passing, she tasks Christian with her last major work of façade makeover. Her funeral should be a massive social event, centered around her stage appearance as the "best-looking corpse." Even the staging of the mortal remains is related to the body to be worked on. Here, too, the self is subject to the demand for malleability as an ongoing process of transformation. This includes "choices of existence, […] the way to regulate one's behavior, to attach oneself to ends and means"[11]—beyond a stable sense of attainability. As a spiral-shaped dynamizing movement, the transformation of oneself drives the outdoing of oneself. It is not concerned with setting up boundaries but with transgressing them. In the pursuit of self-design, every step in the direction of a perpetually shifting goal can only ever be provisional.

3. Self/Image

The malleability of the body, its ability to be shaped and modeled, situates the individual as an assessable being. Thus the individual is never completely master of his own appearance. Gernot Böhme notes "that beauty as an atmosphere can never be the possession of a person because it plays between

11 Michel Foucault, "Subjectivity and Truth," in *Ethics: Subjectivity and Truth. The Essential Works of Michel Foucault, 1954–1984*, vol. 1, ed. Paul Rabinow, trans. Robert Hurley et al. (New York: The New Press, 1997), 89.

persons. The other, the viewer, is a part of the event of beauty."[12] The eventfulness of beauty, its performative character, points to the question of which perception-specific conditions form the basis of the staging of the beautiful. The formation of the self does not develop in a vacuum; it cannot be thought independently of those variables that produce and stabilize the idea of the self. Paula-Irene Villa emphasizes "that 'working on oneself' is by no means a purely subjective, individual 'private affair' of sovereign, rational, free, and self-confident people […]. Rather, decisions about one's body, as decisions about the self, are highly normative."[13] The orientation toward norms and normality determines both self-perception and being perceived by others. Wherever the dream of the unbound ego, of unconditional individualism, confronts an exterior, it confronts its own limit. The inquiring gaze decides what is socially compatible and acceptable: as beings who are taken in by the visual, we constantly move within an identificatory system based on inspection. Accordingly, a life outside of the society that surrounds the individual can be nothing more than a phantasm: the personal is also always public.

The series *Nip/Tuck* demonstrates that the creation of one's identity is not pure voluntarism but is always orienting itself toward guidelines and demands that are brought to the individual's attention. This becomes especially evident in a society that connects the promise of social participation with the demand for cultural assimilation. An episode from season 3, for example, shows just how closely the body's malleability is tied to the question of an ethnic ideal image. The episode "Madison Berg" involves a Jewish mother who wants to give her teenage daughter a special gift for her sixteenth birthday: her Jewish appearance is to be corrected with a rhinoplasty to optimize her chances of a future marriage. While at first the girl hardly seems to be sold on the idea and explains that starting a family is not high on her list of priorities at the moment, Christian is quickly able to convince her. According to his explanations, it is normal to undergo a rhinoplasty—in fact, his practice can boast of its extensive experiences in this area, since it specializes in such operations: "It's true that we have done a lot of rhinoplasties on Jewish girls. And the trend is definitely towards a more refined profile" (*Nip/*

12 Gernot Böhme, *Leibsein als Aufgabe: Leibphilosophie in pragmatischer Hinsicht* (Kusterdingen: Die Graue Edition, 2003), 207.

13 Paula-Irena Villa, "Einleitung: Wider die Rede vom Äußerlichen," in *Schön normal: Manipulationen am Körper als Technologien des Selbst*, ed. Paula-Irene Villa (Bielefeld: transcript, 2008), 8.

Tuck, 3:10). Christian even makes a special offer: the "Sweet Sixteen Package," an all-inclusive carefree package complete with a 20% discount for postoperative recovery at a luxury spa. It is upon viewing aesthetically stimulating images that ultimately leads Madison to change her mind. In a folder containing photographs of successfully operated female rhinoplasty patients, the girl discovers the picture of an attractive female classmate. "Have you seen her 'before' picture?" Christian asks. Astonished by the visual evidence of a Jewish identity whose glaring presence was surgically revised, Madison consents to her physical transformation.

Rhinoplasty as a correction of ethnic characteristics hearkens back to a long tradition of assimilating self-construction. In his comprehensive cultural history of plastic surgery, Sander L. Gilman explains that the demand for surgical correction of the Jewish nose in the United States steadily increased throughout the twentieth century and, in particular, among female patients. In doing so, he stresses an understanding of identity and self as based on visibility: "These young women gave no sign of wishing to abandon their Jewish identity, only their Jewish visibility."[14] As a procedure of self-optimization, adaptation to a socially determined ideal standard appears less as denial than as self-empowerment, as Kim Akass and Janet McCabe argue in reference to *Nip/Tuck*: "Effacement of ethnic difference is time and again less about the denial of culture and racial self-hatred than a pleasure of, and desire for, assimilation into the cultural ideal. Passing here is about being seen as 'natural' by the normalizing gaze, about an (in)visibility predicated on a culturally sanctioned denial of any ethnic or racial difference contravening the norm."[15]

The removal of difference, here the clearing away of what is described as excess cartilage in rhinoplasty, refers to a socially promoted striving for conformity with cultural ideal images. The concurrence of conformity, image, and visuality experienced an enormous thrust through the spread of modern mass media. According to Max Horkheimer and Theodor W. Adorno, the multiplication of images, their mass production and consumption, does not lead

14 Sander L. Gilman, *Making the Body Beautiful: A Cultural History of Aesthetic Surgery* (Princeton: Princeton University Press, 1999), 193. On the history of plastic surgeries on the Jewish nose, see also Virginia L. Blum, *Flesh Wounds: The Culture of Cosmetic Surgery* (Berkeley: University of California Press, 2003) as well as Meredith Jones, *Skintight: An Anatomy of Cosmetic Surgery* (Oxford: Berg, 2008).

15 Akass and McCabe, 123–124

to diversification and differentiation but results in normalization and standardization. In the mid-1940s, the two highlight this tendency toward assimilation as a central characteristic of the culture industry, based on approximation and adaptation: "Culture today is infecting everything with sameness."[16] Here, television takes on a special role. As a medium of repetition and serialization, it is capable of immensely augmenting and impelling the processes of schematization. Furthermore, in coming to the viewer in his or her own home, it creates a nearness through which images produced by the medium superimpose every other way that the world and reality manifest. The more television becomes a part of man's surroundings, the more efficiently the culture industry can mold the consumer. Whoever consumes a mass product in mass quantities himself becomes a mass entity: "The culture industry grins: become what you are."[17] The idea of the individual that can alter itself as an individual is replaced by the production of mass conformity, into which the system has always already incorporated the consumer: "Each single manifestation of the culture industry inescapably reproduces human beings as what the whole has made them."[18]

What Critical Theory conceives of as the position of culture-industrial adaptation, post-structuralism has continued as a model of medium-induced simulation. The permeation of society by electronic media and the increase in channels and screens have been accompanied by a type of development that not only exposes man to a flood of images but makes him himself like an image. This, too, notes Jean Baudrillard, involves a process of adaptation, the "endless approximation of man with himself, because he is dissolved into his basic elements: multiplied on all sides, present on every screen."[19] In the age of the screen, there is no longer a media-independent mode of existence. Existence has become existence-as-image: "Today, we live in the imaginary of the screen, of the interface and proliferation, of commutation and networking. All our machines are screens, we ourselves have become screens, and

16 Max Horkheimer and Theodor W. Adorno, *Dialectic of Enlightenment: Philosophical Fragments*, ed. Gunzelin Schmid Noerr, trans. Edmund Jephcott (Stanford: Stanford University Press, 2002), 94.

17 Theodor W. Adorno, "Prologue to Television," in *Critical Models: Interventions and Catchwords*, trans. Henry W. Pickford (New York: Columbia University Press, 1998), 55.

18 Horkheimer and Adorno, *Dialectic of Enlightenment*, 100.

19 Jean Baudrillard, "Videowelt und fraktales Subjekt," in *Philosophien der neuen Technologie*, ed. Jean Baudrillard, Hannes Böhringer, Vilém Flusser, Heinz von Foerster, Friedrich Kittler, and Peter Weibel (Berlin: Merve, 1989), 113.

the relationship of people to each other has become that of screens."[20] The increase in image production, image distribution, and image consumption makes man into an image-being that orients itself toward images and, itself, takes on the characteristics of an image. There are no longer any definable distinctions between model and replica, between original and copy. Rather, the orientation toward the image is always already bound up in a medium-induced process of multiplication, in the perpetual technical reproduction and proliferation of images.

Surrounded by images, the plastic surgery clients in *Nip/Tuck* yearn for an image-like redesigning of themselves. For example, they often present the surgeons with pictures of television personalities whom they would like to look like. The influence of ideal images, which are disseminated and implemented by the culture industry, reveals a self-understanding that, in turn, takes on the character of an image. The desired image is both the standard and the instrument of standardization. Moreover, it should be noted that the body is repeatedly presented and put on display through various visual techniques: again and again, one sees how it is photographed and filmed, how it appears on monitors, television and computer screens. A particularly striking example of this can be found in the episode "Monica Wilder" from season 4 (*Nip/Tuck*, 4:03). Amazed by how intently his coworkers, Liz and Linda, are staring at a screen, Christian asks the women leaning over a laptop what has caught their interest. The camera perspective then shifts and shows the computer monitor. One can see a sex tape entitled "Naughty Doctor," which shows Christian having intercourse with an anonymous female partner. "This was posted on YouTube yesterday," Liz explains, "it's gone viral in the last 24 hours." While Sean advises his colleague to take legal action due to a wrongful violation of his private sphere, Christian does not act surprised but excited: "I don't give a shit about that. Leaked sex tapes are gold!" The mass distribution, reception, and reproduction of his image apparently does not worry him—only the unfavorable camera position seems to be problematic: "But look at the angle she's got on my tummy. I look like Jabba the Hutt." The video image becomes the medium of measurement and examination of what one wishes to regulate, it becomes the catalyst of self-optimization. Consequently, later on, Christian makes himself into the patient and explains: "I went through the video a few more times and I've identified these as my problem areas." To him, the transition from the zone of problems to the zone of perfection seems as necessary

20 Ibid., 130.

as it is obvious. There is not much left needed for him to become picture-perfect. He must only undergo a simple procedure, as he explains to Sean: "I'd like you to do some lipo on my midsection."

With this model of self-design, it becomes evident that portraying the body and making it visible cannot be conceived of as independent of the visual media and visualization techniques that yield it as something perceptible:

> The more intimately these media of visualization nestle up to everyday life and bodies, the more naturally we become part of these new—social, technological, and libidinal—economic systems and apparatuses. The body ends up in the precarious position of becoming the interface between rationalized systems of exchange and networks of information. Nevertheless, this position seems to be extraordinarily desirable, since it promises an identificatory refuge in the endlessly reflecting images of one's own body.[21]

Images do not only represent bodies; they produce them in the first place. As media processes, they are subject to technical operations, forms of staging, and performance practices, which in turn constitute and condition them. Precisely here, in the process of producing and reproducing, the unfolding of beauty is shown to be a performative principle. When the self is subject to the logic of the image, it then conceives of this pictoriality not as something stiff and inalterable, but flexible and variable. Under the condition and stipulation of visualization, the body itself becomes a medium of the visual.

4. Reference/Reflection

The series continues what the opening credits formulate as a renunciation of the idea of a coherent whole via a complex network of self-referential moments of reflection. It is always referring to what tries to assert itself as a supposedly uncontradictory cohesion, but which is ruptured through reversals and transformations.

An example of this can be found as early as in the second episode of the first season. In the episode "Mandi/Randi," a set of twins visits the McNa-

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21 Karin Esders, "Trapped in the Uncanny Valley: Von der unheimlichen Schönheit künstlicher Körper," in *Screening Gender: Geschlechterszenarien in der gegenwärtigen US-amerikanischen Populärkultur*, ed. Heike Paul and Alexandra Ganser (Berlin: LIT, 2007), 104.

mara/Troy practice. After Sean asks one of the sisters the standard question, "Tell me what you don't like about yourself," she answers with an unexpected inversion: "It's not that I don't like myself." Her feelings of inadequacy are kindled not on her own body but on others' bodies: "I just don't want to look like her anymore." Mandi and Randi Dante long to no longer be confused with one another. Their identity problem results from a perception of others that does not regard them as unique individuals but misconstrues them as mirrored duplications. Thus, the sisters have made the mutual agreement to undergo an operation: Mandi requests a change to her face; Randi desires revisions to her breasts and legs. Sean and Christian agree to perform the operations "in order to establish their own singular identities." In the surgery scene, which shows the simultaneous transformation of the twins, it is not only the visual level, in its symmetrical image construction, that refers to the process of duplication. The audio level, too, indicates duplication in repeating something that has already been formulated before. One can hear the song "Genetic World", an electropop track that both stylistically and thematically recalls the music from the opening credits. This can be heard, for one, in the artificial timbre of the synthesizer's sounds and, also, in the basic construction of the lyrics: "Make your desires reality / it's scientific / it's natural / it's incorrect." Again, the theme of self-improvement is emphasized by the soundtrack, and, again, the series points to the instability of the boundary between artificiality and authenticity. Just as well, the question of feasibility, which starts each process of remodeling one's body, is brought up t again, in order to announce the complications that come with self-transformation in the form of musical foreshadowing. In Mandi's and Randi's case, the demand for perfection is already confronted with its antithesis shortly after the operation. Terrified by the result of the plastic surgery, Mandi breaks down in tears. "She's prettier than me now," she sobs and points to her sister—to which Randi turns to Christian and says, "We just want to go back to the way we were. And we want to be treated the same. Please help us." The dream of a perfect transformation as the solution to all their identity problems turns into the nightmare of an increasingly competitive relationship with one another. Suddenly, Mandi and Randi consider the other side of the coin: self-discovery and loss of self are not far off from one another. Neither is ready to pay the price of individuality, so that the attempt at a transformation ends with its own inversion.

The twin motif, however, is taken up not once, but twice in *Nip/Tuck* and thus presented as a duplication of a duplication. The episode "Rose and Raven Rosenberg" (*Nip/Tuck*, 2:09) again introduces two identical-looking sisters but

brings the situation of duplication to a head: Rose and Raven are conjoined twins who are to be surgically separated. As members of a team of specialists from every discipline, Sean and Christian travel to New York in order to participate in the elaborate operation as experts on plastic surgery. Unlike Mandi and Randi, Rose and Raven do not suffer on account of their physical resemblance but wish to maintain it after the operation and even purposely emphasize it. The answer to the question of a perfect design is thus an inversion of the wish for individual beautification formulated in the earlier episode. Christian wants to know how each would prefer to look after the operation, to which Randi replies, "As much alike as possible."[22] Just like "Mandi/Randi", "Rose and Raven Rosenberg" is also about a reversal: both episodes feature the failure of a transformation and the resulting attempt to undo the operation. After Raven dies during the operation, Rose no longer wants to live. As an incomplete fragment, as a left-over half of a whole that no longer exists, she can no longer recognize her Self and chooses suicide. Death, however, does not appear as the ultimate end but is translated into another stage of variability. In yet another operation, the surgeons bring together what they had initially separated: they sew together the sisters' corpses and thus reintegrate them into the recursive system of transformable bodies.

An uncanny type of mirroring, in which the principle of redesigning meets that of disfigurement, can be seen in the character of the "Carver", a criminal who horrifically distorts the faces of his victims. A serial perpetrator, he attacks particularly attractive women and men, first brutally raping them and then gruesomely disfiguring them. "Beauty is a curse on the world," is his recurring message before cutting up the beautiful faces and slitting both cheeks from the corners of the mouth to the ears. What remains are grisly grinning grimaces as distorted images of modeling inverted into the monstrous. The motifs of the red line and mannequin faces introduced in the opening credits appear here again, only to be rearranged and distorted. In a deforming perversion, the preoperative marks become terrifying drawings that don each

22 The potential for the closest resemblance possible addressed here is reflected in the casting. The fictional conjoined twins Rose and Raven Rosenberg are played by real-life conjoined twins Lori and Dori Schappell. However, there is a slight difference between real life and fictional portrayal. The Schappell twins were initially considered sisters, whereas now they present themselves as siblings. In 2007, one of the twins, who was at that time known as Dori, stated that he identifies as male and changed his name to George.

victim's face with a permanent, doll-like appearance: the "operation" leaves behind a bright red scar as the result of a brutal inscription that causes the smooth, standardized ideal image of a face to break in on itself. A further reflection can be seen in the perpetrator's disguise, which hides his identity behind a doll-like mask. The "Carver" remodels the face in such a way that does not hide the changes but hyper-emphasizes them. The scar, as a permanent symbol of the person's injuries, is not hidden but elaborately produced and presented as an artform of disfigurement. The injury reveals a point of intersection that allows the scar to emerge as a reflexive moment of self-perception: "A scar: a meeting place between inside and outside, a locus of memory, of bodily change. Like skin, a scar mediates between the outside and the inside, but it also materially produces, changes and overwrites its site. If skin renews itself constantly, producing the same in repetition, the scar is the place of the changed script."[23]

The Carver's work on the body matter manifests an inversion that transforms the smoothness of the immaculate surface in its creation of a relief. The scar serves to visualize traces of sensation. Via the mode of visualization, the scar corresponds with image structures and image forms, and even more so: it itself implies the status of the image: "The scar is also an image: it holds strong connotations of social violence, of outsider status, of negativity. And yet, mysteriously, it holds the gaze—the scar incites the look, invites the narrative, fuels the story and anchors it back into (some version of) bodies, time, and space."[24] In the development of scars, one can see a particularly striking reference of the body to itself, to its mutability, malleability and plasticity, its ability to be staged and narrated, its status as an image, which the series *Nip/Tuck* places at the center of its own image processing.

In the reflection of mirroring processes, mediality and seriality intertwine. Not only the body but also the image of the body together with its serial organization is subjected to a series of optimization procedures. The dynamic of overbidding not only drives the innerdiegetic ensemble of characters but also allows the series itself to appear as an enterprise that, by mirroring its own aesthetics, reveals an effort to constantly increase. This media process of self-stylization is especially observable in the fifth season, which presents a

23 Petra Kuppers, *The Scar of Visibility: Medical Performances and Contemporary Art* (Minneapolis: University of Minnesota Press, 2007), 1.

24 Ibid. On the status of skin and scars as images, see also James Elkins, *Pictures of the Body: Pain and Metamorphosis* (Stanford: Stanford University Press, 1999).

series within the series with the introduction of the fictional television show *Hearts 'n Scalpels*. Sean and Christian appear here as series characters playing series characters, they become actors of their own representation.

It is notable here that the patients' stories in the series *Hearts 'n Scalpels* repeat the case stories of *Nip/Tuck* in a hyper-stylized way: every surgical procedure has been presented before, and every personal drama is already known. The surplus does not consist in making the level of the plot, but the level of televisual representation, into a spectacle. Aesthetic staging and stylized visualization are not simply employed but emphasized as technical processes and production practices. This manifests, for example, in the televisual presentation of the show's setting, which not only features the already familiar props and equipment from a highly polished plastic surgeon's office but also makes visible its numerous media technologies: behind every screen in the operating room, there is a TV monitor; behind every lamp in the operating room, there is a TV spotlight. It becomes apparent "that the work of stylization leads to the visibility and reflection of images."[25] The emphasis on monitors and screens, the arrangement of mirrors and projection surfaces, recalls processes of visualization that rely on the fundamentals of image production.

A further moment of reflection occurs in the reference to reality television, which is shown in *Nip/Tuck* via the recursive integration of a show within a show. After the overwhelming success of the series *Hearts 'n Scalpels*, which has made Sean and Christian into popular television personalities, they receive another offer for a television show: they are to be the stars of the reality show *Plastic Fantastic*, where they will perform surgical procedures on live television. The movement of transformation oriented toward self-optimization could not be made more conspicuous. In reaching beyond its fictional universe, the series turns to Reality TV formats that have long since made surgical alterations to the body into their own broadcast reality.[26] In this way, television itself takes on a powerful claim to transformation:

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25 Ralf Adelmann and Markus Stauff, "Ästhetiken der Re-Visualisierung: Zur Selbststilisierung des Fernsehens," in *Philosophie des Fernsehens*, ed. Oliver Fahle and Lorenz Engell (Munich: Fink, 2006), 65.

26 Examples include Reality TV shows that aired concurrently with *Nip/Tuck* such as *Extreme Makeover* (Howard Schultz, 2002–2007), *The Swan* (Nely Galán, 2004–2005), or *I Want a Famous Face* (Pink Sneakers, 2004–2005). Each show presents candidates undergoing plastic surgery to transform and reshape their bodies.

> We can think of Reality TV […] as a televisual mechanism for conducting powers of transformation. Programming has left television, and the whole of reality itself has become programmable. Challenging bodies' limits, interchanging roles and people […] are just a few of the technical procedures deployed in Reality TV's makeovers. Their effects include breaking down the interiorities of subjects, dissolving them into 'dividuals,' and reconnecting capacities with others, in sum, turning subjects into variables, a set of modifiable powers.[27]

One can discern an entanglement of regulating seizures and practices of self-regulation in the coincidence of programming and optimization. Television incorporates its viewers into a complex arrangement of self-guidance and guidance from others; it organizes them as parts of a comprehensive system of adjusting operations. This involves a "specific form of governing technology, which produces effects of power and subjectivization in the coupling of apparatuses, programs, and practices."[28] In emphasizing optimizing procedures created and perpetuated by television, the medium reflects on the requirements and foundations of regulating self-production. It is precisely here where the reflexive achievement of the series *Nip/Tuck* is made manifest: it not only depicts the process of perfection but also considers its claims and contradictions—without excluding itself in the process. In posing the question of optimization, *Nip/Tuck* is always already holding the mirror up to itself.

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27 Jack Z. Bratich, "Programming Reality: Control Societies, New Subjects and the Powers of Transformation," in *Makeover Television: Realities Remodelled*, ed. Dana Heller (New York: Bloomsbury, 2007), 20.

28 Markus Stauff, *Das neue Fernsehen: Machtanalyse, Gouvernementalität und digitale Medien* (Münster: LIT, 2005), 225.

Prescripts and Postscripts
Mr. Robot's Digital Writing Operations

At the center of Sam Esmail's series *Mr. Robot* (Sam Esmail, 2015–2019) stands a pale boy, who is busy incessantly writing: day and night, he sits at his computer and types line by line. This boy is not an author but a hacker. His specialty is programming languages, i.e. syntax systems for organizing program instructions. It is this specialization that makes him so interesting as a character who writes because it makes it possible to consider practices and procedures of writing under digital conditions. With computers, character-based processes emerge that put the conventional understanding of written forms and functions to the test, as Till A. Heilmann notes:

> It is undisputed that the appearance of universally programmable digital computers challenges traditional notions of script in such a way that perhaps only printing with movable type or electrical telegraphy had done before. […] In the place of script's linguistic function of representation, now its productive aspects, in the broadest sense (also beyond its linguistic capacity for mediation), become the focus of attention.[1]

These aspects include the basic modifiability of what is written and what is to be written as well as the procedural nature of processing along with all of its additional operations. Computer scripts are more than text tools: they are forms of communication that not only store information but can also convey and modulate it. The following considerations will show which cultural-technical and media-aesthetic transformations are connected to this and how the series *Mr. Robot* depicts and reflects them.

1 Till A. Heilmann, "Computer als Schriftmedium," in *Handbuch Medienwissenschaft*, ed. Jens Schröter (Stuttgart: Metzler, 2014), 316.

1. Writing In

The fact that *Mr. Robot* operates with its own unique understanding of script and text can be seen in the descriptions of the individual episodes in the series. Every episode title is reminiscent of a file name, thus combining letters and numbers in a string of characters that diverges from natural linguistic conventions and instead focuses on a computer-specific usage of formal language. In the first season, each title contains a file extension from a specific video format: for example "eps1.0 hellofriend.mov" for the first episode, "eps1.1_ones-and-zer0es.mpeg" for the second episode, and so on. In the second season, the titles refer to file extensions of encryption programs: "eps2.0_unm4sk-pt1.tc" for the first, "eps2.1_k3rnel-pan1c.ksd" for the third episode, and so on. As cryptic as the episode titles may appear at first, their labeling clearly points to the inherent media logic of a program-controlled writing system, whose legibility is not aimed at phonetic conventions but at machine processes. This refers to a far-reaching transformation of the use of writing, the central features of which Sybille Krämer describes as follows:

> With the emergence of the computer, it becomes possible not only to process signs, but to transform the signs into self-moving, responsive, and thus 'behaving' objects. Contrary to the often lamented loss of the book and of writing in the age of computers, the computer does not simply make the operational space of writing disappear but opens up a new dimension of writing potential.[2]

Digitalization does not involve the erosion of writing but a transformation of its forms and functions. The possibility of machine-driven character processing develops a potential that surpasses the efficiency of phonographic speech, that transforms and modifies it. This is the potential at the core of the series *Mr. Robot*—and, along with it, the question of how and to what ends it can be used.

Elliot Alderson, the series protagonist, proves to be the greatest virtuoso in the new art of writing. Elliot works as a cybersecurity engineer at the IT company *Allsafe Cybersecurity*. There, his job consists of tending to the protection of corporate programs and IT infrastructures. His particular skill set,

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2 Sybille Krämer, "'Operationsraum Schrift': Über einen Perspektivwechsel in der Betrachtung der Schrift," in *Schrift. Kulturtechnik zwischen Auge, Hand und Maschine*, ed. Gernot Grube, Werner Kogge, and Sibylle Krämer (Munich: Fink, 2005), 46.

however, enables him not only to uncover security vulnerabilities inherent in programs but also to exploit them. Elliot is a highly skilled hacker who knows how to apply his talents beyond the clearly defined job requirements. His actual specialization consists of browsing through the lives of others, gaining access to their data traffic, and thus inscribing himself in their digital existences.

Elliot's writing skills at first rely on a particular reading ability. "I'm good at reading people,"[3] he says at the very beginning in a voiceover—and is primarily referring to the reading of seemingly protected data sets. For Elliot, being able to read someone means gaining access to digitally written self-representation and life stories: emails, chat histories, social media accounts, and dating profiles. While, for example, his psychotherapist, Krista Gordon, tries to look behind Elliot's façade and explore his innermost being in extensive therapy sessions, he has long since succeeded in deciphering her digital identity. Elliot has cracked her passwords and hacked into her life: He knows about her failed marriage, her weaknesses, and her interests; he knows her new partner whom she met on a dating site, and he is able to read her digital correspondences, all of her notes and text messages.

In a broader sense, these texts can be understood as literary forms, as written documents produced by computer-assisted writing. "Literature is an ongoing system of interconnecting documents,"[4] Theodor Nelson declared in the early 1980s in his influential work *Literary Machines*. He thus provides an early approach to an expanded interpretation of the concept of literature focused less on individual authors and single works and more on a variable text system.[5] Nelson's vision is principally directed toward overcoming the book

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3 *Mr. Robot*, 1:01: "eps1.0_hellofriend.mov".

4 Theodor Holm Nelson, *Literary Machines* (South Bend, IN: The Distributors, 1987 [1980]), 2/9. (The page number provided corresponds to the non-linear design of the book, whereby the first digit denotes the chapter and the second digit the page.)

5 Among the most important precursors to Ted Nelson's vision was Vannevar Bush's design of the Memex, a machine for connecting documents and storing texts. Cf. Vannevar Bush, "As We May Think," *Atlantic Monthly* 176, no. 1 (1945): 101–108. Following Bush and Nelson, Jay David Bolter and Espen J. Aarseth have addressed the development of a computer-based intertextual system of reference that dissolves the boundaries between author and reader and thus re-poses the question of the inner constitution of literature. Cf. David Jay Bolter, *Writing Space: The Computer, Hypertext, and the History of Writing* (Hillsdale, NJ: Lawrence Erlbaum 1991) and Espen J. Aarseth, *Cybertext: Perspectives on Ergodic Literature* (Baltimore: John Hopkins University Press, 1997).

as the dominant literary form. Instead, he imagines the formation of a flexible data space based on non-sequential practices of writing and reading as well as on the dynamic linking of documents.

Elliot moves within a similar data space during his acts of hacking—albeit far more agilely and flexibly than Nelson had envisioned in his utopia of literary machines. Whereas Nelson's had started from a chiefly polydirectional distribution of reading and writing positions, Elliot must first deal with the uneven distribution of rights to access built into the system. Unlike Nelson had hoped, the vision of unrestricted networking and distribution of texts has by no means been realized in the digital age. Instead, a hierarchical system regulates who is allowed certain operations of writing and reading and how they can be used, as Claus Pias emphasizes:

> Users have the right to inputs and outputs that a given program allows. System administrators, however, are authorized to write juridical texts for access management, and programmers have access to the source codes themselves. Users—to put it succinctly along with Lyotard—do not have the right to express themselves "metaprescriptively." They are allowed to follow rules (in other words, programs) but not write any. […] The decisive factor is thus not the absolute, technical boundary between the invisible digital and the visible analog computer but those programmed and controlled, paid for and protected boundaries that, as software, always already regulate who has access to which part of the system, in other words, who has which options at his or her command and what remains hidden for whom.[6]

As a hacker, Elliot's main competence consists of overriding the system's rules. His skills exceed the simple typing of the average user because they are not limited to allocated options of use but encompass all technical reading and writing processes—even and especially those from which others are excluded. It is precisely this proficiency that allows him to not simply accept the prescriptions of the program but to challenge them by inscribing his hacking into it.

Elliot's hacks are not just technical shenanigans but writing operations that entail serious consequences. As such, they are organized serially in principle, as already becomes clear in the pilot of the first season of *Mr. Robot*. Thus, it is notable that Elliot acts like a serial offender: he does not indulge

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6 Claus Pias, "Der Hacker," in *Grenzverletzter. Figuren politischer Subversion*, ed. Eva Horn, Stefan Kaufmann, and Ulrich Bröckling (Berlin: Kulturverlag Kadmos, 2002), 253–254.

in the individual, unique action, or the singular, extraordinary motif but in the continuous intervening into locked data systems, which themselves have serial structures. Nearly all the people Elliot comes into contact with are read out via their data traffic. This does not involve so much a voyeuristic form of spying, in other words, observations from a safe distance, but a type of intervention that does not remain ineffective for those being spied out. In the case of his psychotherapist Krista, for example, Elliot not only tracks her digital communications but also focuses on other individuals that he finds in her network contacts. Every operation entails an additional operation, and every additional operation comes with a new hurdle, in other words, with increasing challenges to the act of inscription. While in Krista's case, a simple guess of the password is sufficient to gain access to her email and social media accounts, the readout of her date, Michael Hansen, proves to be more complicated. Now, Elliot has to acquire the man's smartphone through physical contact, control the apps installed on it, and then use specialized software for hacking his login credentials. Consequently, Elliot is able to successfully expose Krista's new partner as a fraudster: Michael Hanson is actually Lenny Shannon, a married man who uses various alias identities to initiate his numerous affairs. Lenny's fraud, itself uncovered through fraud, leads Elliot to follow up the inscription into Krista's system with a deletion: through blackmail, he forces Lenny to disappear from Krista's life.

Elliott's writing operations show what it means to acquire mastery over digital writing systems. Only by not submitting to program-controlled typewriting, but by knowing how to interfere in writing systems, does one become a sovereign digital author.[7] This has less to do with the content of the acquired texts and more to do with the media conditions of digital reading and writing themselves: with a profound understanding of their foundations and the subversion of their system-immanent regulations. "The computer," writes Derrick de Kerckhove, "is the most suitable technology for the disposal

7 Dirk Baecker even sees the hacker as the new intellectual of digital society. Cf. Dirk Baecker, "Vom Priester zum Hacker: Die Konjunktur des Intellektuellen," *Der Freitag* 51 (December 12, 1997), 15. The Google software developer Stuart Feldman also recognizes a similarly creative potential, declaring in an interview: "Writing code […] is like writing poetry: every word, each placement counts. Except that software is harder, because digital poems can have millions of lines which are all somehow connected." Cf. Ludwig Siegele, "The Beast of Complexity: A Survey of Software," *The Economist*, April 12, 2001.

of language and not only because the computer replaces it with machine language but because it takes over a large portion of the cognitive operations that previously belonged to our field of conscious functions."[8] As a hacker, Elliot knows of this capability of computers, and he therefore knows more than a mere user: he knows the inner logic of machine language, and he can not only follow it but also make it productive. In this sense, inscribing also involves an encroachment: an intervention that understands how to apply and exploit the possibilities of the technically operable writing system beyond all upstream rules.

2. Rewriting

Elliot's encroachments on only seemingly closed worlds of data are not limited to developing readouts of individual accounts but escalate into an offensive force that is directed toward the entire system of mass cultural programming. Connected to this is a sense of uneasiness about the type of industrial standardization that makes commodities generally accessible but also devalues them in the process. Every consumer, indeed all of society is included in a network of product circulation that endorses and demands conformity, as Elliot points out: "How do we know if we're in control? That we're not just making the best of what comes at us, and that's it? Trying to constantly pick between two shitty options? […] Coke or Pepsi? McDonald's or Burger King? Hyundai or Honda? […] In fact, aren't they…aren't they the same? No, man, our choices are prepaid for us, long time ago."[9]

Elliot's critique of a system of standardized commodity production, to which the individual must adapt and subject himself, is ignited by an enlarged program of serialization that produces not only always identical products, but also always adapted and self-adapting consumers. Because industrially organized consumer culture is all-encompassing and capable of penetrating every area of life, every option for selection seems to be an illusion: every possibility for a selection supposedly at our fingertips has already been made into the default setting for us by someone else.

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8 Derrick de Kerckhove, "Vom Alphabet zum Computer," in *Kursbuch Medienkultur. Die maßgeblichen Theorien von Brecht bis Baudrillard*, ed. Claus Pias, Joseph Vogl, Lorenz Engell, Oliver Fahle, and Britta Neitzel (Stuttgart: DVA 1999), 123.

9 *Mr. Robot*, 1:02: "eps1.1_ones-and-zeroes.mpeg".

This critique was formulated early on in media theory, prominently, for example, by Günther Anders[10] and Theodor W. Adorno.[11] The paradigm of mass culture developed by Critical Theory, however, takes on a new facet in the digital age. Here, it does not only involve the production of commodities but also the processing of information. Each user is not only connected to this type of data processing, they also propel it and expedite it, as Elliot states: "The world itself is just a big hoax. Spamming with our running commentary of bullshit masquerading as insight, our social media faking as intimacy."[12] The more information that is disseminated, the more comments and ratings that circulate, the more these are linked and forwarded via social media platforms, the more stable the system becomes. In this sense, according to Elliot, we do not go from consumers to producers, as the idea of media prosumers in digital participatory culture holds,[13] but remain contributors to a data-processing control program.[14]

The conclusion that Elliot draws from this observation is now not to disseminate other, critical content, but to manipulate the media foundations of the system itself. This includes the realization that the program's functional power has nothing to do with the mediation of certain meanings but that it is the form of the operation itself that is capable of exerting control. Thus, algorithms, for example, are capable of influencing purchase decisions, and not because they have something to say about certain products but because they are a repetitive process of calculation that operates with a series of characters and transforms them at the same time. It is this potential for structural trans-

10 See Günther Anders, *Die Antiquiertheit des Menschen. Bd. 1: Über die Seele im Zeitalter der zweiten industriellen Revolution* (Munich: C.H. Beck, 1985 [1956]).

11 See Theodor W. Adorno, "Culture Industry Reconsidered," in *New German Critique* No 6 (Autumn, 1975), 12–19.

12 *Mr. Robot*, 1:02: "eps1.1_ones-and-zeroes.mpeg".

13 See for example Henry Jenkins, Mizuko Ito, and Danah Boyd, *Participatory Culture in a Networked Era: A Conversation on Youth, Learning, Commerce, and Politics* (Cambridge, MA: Polity Press, 2016).

14 Alexander R. Galloway has stressed this aspect: even when the communication structure of the Internet suggests exchanges free of hierarchies, it is not free of technical presettings and control mechanisms built into the system. Cf. Alexander R. Galloway,*Protocol: How Control Exists After Decentralization* (Cambridge, MA: MIT Press, 2004).

formation, this particular form of agility and generativity[15] of process-driven operations, that Elliot exploits. It no longer involves the act of inscribing but of re-scribing, rewriting: the use of a disruption that forces the system into a redirection. The bug implemented by the hacker, the error in the program, not only causes the system to crash but drives transformations and modulations, as Elliot explains: "The bug forces the software to adapt, evolve into something new because of it. Work around it or work through it. No matter what, it changes. It becomes something new. The next version. The inevitable upgrade."[16]

Against a system of all-encompassing control of data-processing, the hacker sets the loss of control.[17] He is aware of the possibility of a structural change inherent in the program's writing processes themselves. This change is embedded in a sequence of repetitions. On the one hand, it is organized serially as a chain of computational processes; on the other hand, it is also linked to transformations, relentless shifts that are no longer bound to the intention of a single subject. Every transgression produces a further dissolution of boundaries, every movement provides for a new version. What before had seemed manageable, capable of being controlled and regulated, is now revealed to be a border area that defies control. "Hacking incessantly expands the territory of the play of symbols, and preferably at its edges,"[18] as Claus Pias notes. In this sense, the hacker's disregard for technical standards, regulations, and rules sheds light on a creative potential that exchanges the abstract world of fictional writing for the concrete situation of auto-operative writing practices. As Alexander Galloway states, this is where an all-encompassing transformation of the understanding of media conditions is possible,

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15 This aspect of generativity has been especially emphasized by Geoff Cox, Alex McLean and Adrian Ward, "The Aesthetics of the Generative Code." Online. http://generative.net/papers/aesthetics/.

16 *Mr. Robot*, 1:03: "eps1.2_d3bug.mkv".

17 According to Martin Warnke, the principle of losing control is intimately connected with computer-technical networking processes: "As the most prominent example of a networking of consciousness and computers on a grand scale, the Internet demonstrates what computer science must adapt to: to conscious renunciation of control, to allowing emergent processes, to self-organization, to network topologies, which, in technology as in biology or sociology, follow an approachable law—that of freedom of scale—but nevertheless cannot be modeled in detail in their development." See Martin Warnke, *Theorien des Internet zur Einführung* (Hamburg: Junius, 2011), 175.

18 Pias, "Der Hacker," 262.

in other words, the technical protocol turning against itself: "When viewed allegorically, hacking is an index of protological transformations taking place in the broader world of techno-culture."[19]

The series *Mr. Robot* reflects this possibility of transformation through an aesthetic that emphasizes constant change. Crucial here is the fact that a categorical differentiation between the preceding and the following, between the mere idea and its implementation, between option and realization, can no longer be discerned;[20] rather, one inverts into the other, both interact with and permute one another to the point of indistinguishability. This imbalance sets in right at the beginning of the series. "Hello, friend," Elliot says in a direct address to the viewer. "Hello, friend? That's lame. Maybe I should give you a name. But that's a slippery slope. You're only in my head. We have to remember that."[21] The basic narrative structure plans on the fact that we, as the viewers, could be an illusion, in other words, that we may only actually exist in Elliot's head. Just as uncertain as this positioning, all others subsequently appear: the enigmatic Mr. Robot, the digital identity designs of the other characters, the overpowering, global conglomerate E-Corp—they could all spring from the imagination of the schizophrenic protagonist, i.e. merely exist virtually, or they could be part of the real world with which Elliot actually interacts. The images illustrate the instability of the inner fictional universe of the series by frequently oscillating between two extremes—also, and especially, when it concerns the potential of inscribing and re-scribing. Thus, in some scenes, Elliot appears in front of an empty background that comes off as a blank page and, in others, in front of starkly contrasting scenery that is full of moving light elements (Fig. 5).

19 Galloway, *Protocol*, 157.

20 This aspect is especially emphasized by Don Fallis, "0n-keeping-everybody-1n-the-d4rk.docx," in *Mr. Robot and Philosophy. Beyond Good and Evil Corp*, ed. Richard Greene and Rachel Robinson-Greene, 171–180 (Chicago: Open Court, 2017).

21 *Mr. Robot*, 1:01: "eps1.0_hellofriend.mov".

Fig. 5: Elliott in front of different backgrounds

While the first shot creates a type of stable grid through a symmetrical orientation of vertical and horizontal lines, the second shot is out of line through the low-angle, oblique perspective. The lack of saturation in the first image causes it to appear pale and colorless, whereas the second image comes off as obnoxiously bright. Even if the contrast between both situations is obvious, there are also still similarities between the two: both images are structured by grid designs, and in both, Elliot is placed in such a way that he just misses the middle of the image. He is positioned either too far to the right or to the left, in addition to often being in the lower half of the image, so that he is visually diminished. Elliot does not fit into the pattern; he is the disruptive factor personified. As a result, he appears as an irritating figure of interference which one can no longer clearly locate at any fixed point.

The most realistic elements, and this is the actual punch line of the series, are the computer-technical writing operations themselves.[22] Within the fictional universe of *Mr. Robot*, there are no stable distinctions, but only an unmanageable mesh of relations, a highly mobile game of interchangeable positions. Throughout the entire series, the level of transition between actual

22 *Mr. Robot* has been repeatedly praised or its real-life presentation of hacker culture—by cybersecurity companies such as Avira or Kaspersky as well as by fans and bloggers. In fact, the exact depiction of computer technology operations was so important to writer and director Sam Esmail that he consulted with several IT experts and employees of the FBI Cyber Division: every individual detail should relate to actually existing source codes and toolkits, and every input command should be a command that one could actually perform on a computer. On the technical accuracy of the processes depicted in the series, see in detail: Kim Zetter, "How the Real Hackers Behind Mr. Robot Get It So Right," *Wired*, July 15, 2016.

and virtual is vague and blurry—only the mediating instance of the crossing of boundaries, i.e. the writing processes themselves, remain stable. Here, the images are clearly aligned; here, they adhere to the structure of linearity; here, nothing is stretched or shifted. This can be seen, for example, in the first episode of the second season, "eps2.1_k3rnel-pan1c.ksd." The episode shows Elliot's attempts to withdraw from the world of hacking and lead an "analog" life without computers—for example, by writing a classic paper diary. Upon closer inspection, however, it becomes apparent that the combinations of numbers and letters that he writes in his notebook are nothing more than computer codes. Thus, the penultimate line shows the following hand-written information: "Kernel panic—not syncing". The viewer has already seen this note shortly before on a black screen that shows the same information in the last line: "Kernel panic—not syncing" (Fig. 6).

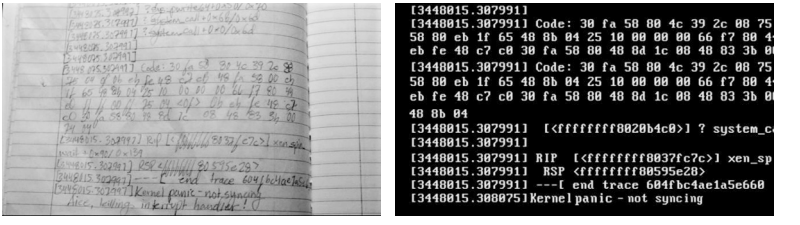

Fig. 6: The error message "Kernel panic" is displayed alternately on paper and on a computer screen.

A kernel panic involves a "safety measure taken by an operating system's kernel upon detecting an internal error in which either it is unable to safely recover or continuing to run the system would have a higher risk of major data loss."[23] This type of dysfunction seems to also be playing out in Elliot himself, as a rapid sequence of pictures of his wide eyes with subjective shots of both distorted and pixelated fragments of his perception suggests. As the diagnosis of a malfunction, the repeatedly intercut screen with information about synchronization problems proves to be an inevitable text message, one which is not bound to an individual interpretational perspective but which derives from the system itself. Even more so: as a formal language statement, it is capable of accomplishing more than the hand-written note because it is

23 https://en.wikipedia.org/wiki/Kernel_panic.

technically executable, as Alexander Galloway explains: "Code is a language, but a very special kind of language. Code is the only language that is executable. […] So code is the first language that actually does what it says—it is a machine for converting meaning into action."[24] In this way, in all inversions and distortions that the series depicts, the superior level of observation in the operating system remains untouched: as the totality of that which can be written, displayed, and carried out as information.

3. Writing Onward

Digital writing systems have their own medial sense. Their specific quality lies in the non-linearity and interminability, in the structural possibility of generating moveable connections. Through this unique form of flexibility, they broaden the framework of the textual structure and enable the transition from a fixed, inalterable arrangement of meaning to a procedural form of meaning production. The series *Mr. Robot* seizes these processes not only thematically but also reflects it in its images and even beyond them, as the following will demonstrate.

One example of the mobility of referential structures is found in the numerous intertextual references that the series invokes. This network of references is realized in both its visuals and its sound: on the visual level, for example, by referencing Stanley Kubrick's *The Shining* (1980), when Elliot, in his delusions, glimpses the eerie twin girls from the Overlook Hotel[25] and, on the audio level, through its use of a cover version of the Pixies song "Where Is My Mind?,"[26] that refers to the background music used in the finale of David Fincher's *Fight Club* (1999). Both allusions refer to stories of schizophrenia that have had staying power in the broader pop culture consciousness: both *The Shining* and *Fight Club* deal with dissociative identity disorders, and both films depict the disturbances associated with them through unreliable narration, distorted imagery, and innovative sound design.[27] *Mr. Robot* ad-

24 Galloway, *Protocol*, 165–166.

25 *Mr. Robot*, 2:01: "eps2.0_unm4sk-pt1.tc".

26 Ibid., 1:09: "eps1.8m1rr0r1ng.qt":

27 In addition to the two examples mentioned above, numerous other film references can be traced, such as allusions to *Psycho* (Alfred Hitchcock, 1960), *A Clockwork Orange* (Stanley Kubrick, 1971), *Taxi Driver* (Martin Scorsese, 1976), *Network* (Sidney Lumet, 1976), *The Matrix* (Larry and Andy Wachowski, 1999), and *V for Vendetta* (James

dresses these themes and motifs in order to make them recognizable as influences and, thereby, to design a flexible system of aesthetic transfer. This has less to do with the fact *that* complex and unreliable narration is used[28] than with the question of *how* this is done. The central focal point is the recourse to the dynamic operativity of digital sign systems—also, and especially, when it concerns their representability.

A noticeable cue to this can be found in the third episode of the first season. Here, Romero and Mobley, two hackers from the *fsociety* collective, are watching the film *Hackers* (Iain Softley, 1995), more specifically: a sequence that shows the filmic visualization of the virus injected into the computer system as wildly flashing animations.[29] "Hollywood hacker bullshit," Romero comments. "I've been in this game for 27 years. Not once have I ever come across an animated singing virus." Mobley replies: "I have yet to fly through a *Tron* city directory structure." Romero then declares: "I bet right now some writer's working hard on a TV show that'll mess up this generation's idea of hacker culture." The criticism of the implausibility of fictional hacker scenarios formulated here refers to those over-stylized depictions in which the inner world of computer systems is projected onto the outer world. In both *Hackers* and *Tron* (Steven Lisberger, 1982), the program's processes that actually occur invisibly are visualized as animated patterns: bits fly through the air, pixel grids surround the characters, columns of numbers leave the computer screen and buzz around freely through space. Romero's remark can be understood as a self-referential hint—a reference to Sam Esmail, the writer behind *Mr. Robot*, who makes it his business to create a counter-image to unrealistic hacker fantasies. It is remarkable how resolutely the series *Mr. Robot* refrains from any type of fictional, stylized depictions of programming and data processes and how decisively it insists on the fact that digital writing operations

McTeigue, 2005). On these and other allusions, see Matt Zoller Seitz, "Why *Mr. Robot's* Film References Are Subtler Than You Think," *Vulture*, July 15, 2016.

28 On traditions and possibilities of unreliable narration cf. *Was stimmt denn jetzt? Unzuverlässiges Erzählen in Literatur und Film*, ed. Fabienne Liptay and Yvonne Wolf (Munich: edition text + kritik, 2005); *Falsche Fährten in Film und Fernsehen (Maske und Kothurn, Jg. 53/2–3)*, ed. Patrick Blaser, Andrea B. Braidt, Anton Fuxjäger, and Brigitte Mayr (Vienna/Cologne/Weimar: Böhlau, 2007); *Unreliable Narration and Trustworthiness. Intermedial and Interdisciplinary Perspectives*, ed. Vera Nünning (Berlin/Boston: De Gruyter, 2015).

29 *Mr. Robot*, 1:04: "eps1.3_da3m0ns.mp4", TC 00:15:15–00:15:36.

can only be mediated by actually existing interfaces.[30] Whatever is going on inside the computer is hidden from view. What can be represented, however, are the input and output data that appear on the screens, and even more: the media potential of linking and interlinking that are connected with them.

The significant innovation of *Mr. Robot* consists of the fact that it does not limit the dynamics of digital networking to the interior universe of the series but expands these dynamics beyond the series' fictional boundaries. Behind this is the claim to make every hacking depicted hackable itself, that is, not to aestheticize the information shown as metaphorical patterns, but to make it comprehensible to the TV viewer by means of his or her own computer operations. As a result, an undeterminable variability between fiction and reality emerges. Thus, the codes shown in the series are not only authentic character sequences but are themselves executable: whatever appears on the intra-fictional screens has a real-world counterpart. In this way, the series develops a complex network of additional information, a kind of application prompt directed at the viewer as user: "Any number, QR code, bar code, host name, or IP address that appears on the show also has a counterpart in real life. Plug that information into a browser, and you'll go to a website. Freeze frame a scene, scan the code, and it will lead somewhere."[31] The websites that can be accessed offer various sets of information and potential applications: they range from specially designed homepages of the companies presented in the series to interactive chat programs to the hacker community *fsociety*'s digital meeting places, which contain secret input commands with which one can access even more IP addresses.[32] Along with this complexly designed web presence, there are further intermedia possibilities of connecting: such as, for example, the mobile game *Mr. Robot:1.51exfiltration.apk*, developed by Telltale Games, in which the user can interact via a messenger app with the main characters from the series or the Virtual Reality application *Mr. Robot – Virtual Reality Ex-*

30 In this sense, *Mr. Robot* deviates markedly from those current tendencies in series aesthetics that locate computer fonts beyond their place on the display and visualize them as information freely floating in space—such as, for example, the three-dimensional animated graphics in the hacker series *The Code* (Shelley Birse, 2014–2016), or the experimental text overlays in *Sherlock* (Mark Gatiss and Steven Moffat, 2010–2017).

31 Matthew Giles, "How *Mr. Robot*'s Incredibly Detailed Easter Eggs Come Together," *Vulture*, September 1, 2016.

32 Kayla Cobb provides an overview in Kayla Cobb, "Every Easter Egg from *Mr. Robot* Season Two So Far," *Decider*, August 25, 2016.

perience 360°, created by Sam Esmail, which confronts the viewer with pivotal moments of Elliot's past.

What these expansions all have in common is their encouragement of viewers not only to consider the digital writing and reading processes addressed in the series but also to become involved themselves. In doing so, the constantly self-expanding interlinking points to one of the basic practices of hacking: the purposely implanted virus. "Viruses," Ruth Mayer and Brigitte Weingart explain, "recode foreign operating systems for their own purposes and thereby undermine asymmetrical power relations."[33] In a digital context, this applies not only to the danger of contamination but also the non-linear and therefore non-directional form of a transmission made possible only by network-based forms of interaction. Crucial here is the double process of information circulation: in the digital transmission chain, each link is both recipient and transmitter of the pathogen. This is precisely why the virus is brought into play where the destabilization of established hierarchies and the overcoming of system boundaries are at stake. Of particular importance is the self-replicating power of infection, or more precisely: its dynamic connectivity. Mayer and Weingart emphasize that "[t]he logic of infection cannot be understood in the terms of individuality, directionality, and linearity. Rather, it is constantly creating new supra-individual, flexible, and instantaneous connections and complexes."[34] This principle of non-linearity and flexibility is not only featured as a motif in *Mr. Robot* but is also driven by intermedial extensions. It then becomes apparent that digital communication processes not only concern the transmission of data but also data processing: the processing of information.

The seriality that underlies *Mr. Robot* is a specifically digital seriality: it is based on connectivity and variability, on the constant transformability of shifting relations. This applies to both the writing and reading processes prominently addressed in the series, as a result of which a new understanding of literature begins to emerge and spread, and to the constitution of televisual narration as a whole. What can be observed in *Mr. Robot* is a profound grappling with processes of media upheaval. These include a departure from the fixed text of the analog letterpress age as well as a rejection of the

33 Ruth Mayer and Brigitte Weingart, "Viren zirkulieren. Eine Einleitung," in *Virus! Mutation einer Metapher*, ed. Ruth Mayer and Brigitte Weingart (Bielefeld: transcript 2004), 9.

34 Ibid., 25.

linear, rhythmic narration found in pre-digital television. We no longer write on paper but type on our computers, and we no longer zap through pre-programmed television with fixed broadcasting schedules but move through variable streaming offerings. Now, all of this has become part of our everyday digital life: previously stable demarcations are replaced by the possibility of increased intervention. Bringing this to our attention and making it productive as an aesthetic reflection are the greatest achievements of *Mr. Robot*.

II. SMALL FORMS

Tipp-Ex
Small Corrections

No text is created without corrections. What is presented as a coherent whole after completion is, in fact, shot through with mistakes and rejections. Whoever makes an attempt at writing will experience disturbances. These interferences in no way only apply to great thoughts but also, primarily, occur in the small things that are involved in the writing process. It is the notorious mistakes and malfunctions and—even more—the techniques of their deletion that are of particular interest to me in the following essay. In addressing these, I start with a small, everyday object that was developed to delete typographical mistakes: Tipp-Ex. As an object of observation, it offers the possibility of looking past the completeness of a text and turning to the structural and material conditions of its development. What makes Tipp-Ex interesting, then, are the corrections *in* the small and the corrections *of* the small, i.e., those corrections that are observable as media practices and procedures and become effective in the interplay of technological and epistemological factors.

This is connected to a certain correction of the view, an altered line of vision that does not start from a finished text but considers the processes of its production. What happens when one looks past the big and focuses on the small? A new perspective emerges. It "requires and enables a different optics, a specific vision, and a different epistemology: it is interested in the smallest thing, in the supposedly marginal or insignificant, it focuses on microstructures and penetrates into the smallest particles of things, which become for it the signum of knowledge."[1] Such a change in perspective presents the pos-

1 Wolfgang Schäffner, Sigrid Weigel, and Thomas Macho, "Das Detail, das Teil, das Kleine. Zur Geschichte und Theorie eines kleinen Wissens," in *"Der liebe Gott steckt im Detail". Mikrostrukturen des Wissens*, ed. Wolfgang Schäffner, Sigrid Weigel, and Thomas Macho (München: Fink, 2003), 7. On the insight possibilities of details and microstruc-

sibility of new insights, which this text examines along the lines of typing errors, deleting agents, and methods of correcting.

Every small form is part of a history of forms to which it is reacting, which it adapts, interpolates, and transforms. And every culture of the small is part of a history of cultural techniques to which it relates. For the cultural technique of writing and the related cultural forms of text production and reception, the introduction of the typewriter initiated a profound transformation.[2] The typewriter mechanizes writing, organizes it in terms of processes, and optimizes it by machine. The idea of individual handwriting is thus contrasted with the production of writing as a media technology. This media technology is in turn, unlike letterpress printing, closely tied to the hand as the organ that performs it. It does not require a single movement of the hand but multiple taps of the fingers, insofar as typing is a sequence of single keyed operations. These changes entail, on the one hand, the potential to increase efficiency and, on the other hand, effective problems. The typewriter is capable of not only increasing the speed of word processing but also, simultaneously, of calling into question the seamless flow of writing with the common occurrence of errors that comes along with its use. These deviations and irritations bring to light what lies beyond the grand form of the regulated order of knowledge.[3] The moment of a small interference in one's writing is also always a moment of doubt: it throws the medium back on its foundations and thus expands the boundaries of what can be surveyed and expected.

Siegfried Kracauer describes a telling example of this in his 1927 text "The Little Typewriter." It involves an author and his typewriter, whose initially balanced relationship is suddenly greatly disrupted: "One day, an unexpected event occurred: the little typewriter became *sick*. Well, not the machine really, and to call it sick is exaggerated. Only one minor key failed, a keylet really, off to one side."[4] Only minor, only off to one side—and still, everything changes all at once. The defect of the small, the failure of a single key, affects the big

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tures, see further: *Was aus dem Bild fällt. Figuren des Details in Kunst und Literatur*, ed. Edith Futscher, Stefan Neuner, Wolfram Pichler, and Ralph Ubl (München: Fink, 2007).

2 Cf. Friedrich Kittler, *Grammophon, Film, Typewriter* (Berlin: Brinkmann & Bose, 1986), 271–380.

3 On the productivity of errors in media history, see *Goofy History. Fehler machen Geschichte*, ed. Butis Butis (Köln: Böhlau, 2009).

4 Siegfried Kracauer, *The Little Typewriter*, trans. Johannes von Moltke, ed. Meghan Forbes and Hannah McMurray (Ann Arbor: Harlequin Creature, 2017), no pp.

whole: not only does his writing come to a halt, but the writer is also suddenly deeply affected by it. While at first, he admired the machine "[g]iven its perfection,"[5] now, at the abrupt moment of the malfunction, a blockade takes place. What the machine initially allowed for, is now prevented by the "key's paralysis."[6] The machine seems to possess its own dynamics, even a life of its own, and seems like a vulnerable organism in Kracauer's image of its sickness. What threatens it also afflicts the user. Suddenly, something becomes visible that at first seemed hidden: the white spot on the paper and, thus, the gap in the text.

Kracauer's miniature reveals a particular attention to small elements and short irritations, even more so: it indicates a change in perspective. "When looking back at such occurrences in the material cultures […] of the nineteenth and twentieth centuries, a conception of knowledge [arises] that more greatly emphasizes the coincidences, contingencies, and arbitrariness than the planned and expected."[7] The incident [*Zwischenfall*, between-occurrence] is also simultaneously an interval [*Zwischenraum*, between-space]. It enables "a rejection of overarching orientations"[8] and a shift in focus onto those empty spaces out of which something new can arise.

Interferences are not only irritating but also catalyzing. They are innovative, in the sense that they raise questions about new ways of dealing with errors. From the small errors of writing with a typewriter, medium-driven techniques and material arrangements develop that seek to conceal and correct the irritations. In doing so, the increase in malfunctions that appear with the expansion of machines plays a crucial role. The more the typewriter made its way into public and private spaces, the more obvious its use for organizational procedures became, the more often small mistakes began to appear. Not only can keys get stuck, but fingers can also mistype. Every now and then, they miss the correct key and thereby produce typographical irritations. Here, too, the regulated process is disturbed, with the difference being that the human typist has now become the actual machine defect.

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5 Ibid.

6 Ibid.

7 Bernhard J. Dotzler and Henning Schmidgen, "Einleitung: Zu einer Epistemologie der Zwischenräume," in *Parasiten und Sirenen. Zwischenräume als Orte der materiellen Wissensproduktion*, ed. Bernhard J. Dotzler and Henning Schmidgen (Bielefeld: transcript, 2008), 7.

8 Ibid.

With the introduction of the electric typewriter, keyboard switches became smoother, increasing the probability of typos. It was a professional typist who not only noticed the proliferation of these small disturbances but also developed a novel solution for how to correct them. In the early 1950s, the American secretary Bette Nesmith Graham created a white paint coating with which one could paint over incorrectly typed letters in the text and then write over them. She initially named her invention, a well-coating and fast-drying white paint in handy little bottles, "Mistake Out" but changed the name a few years later and ultimately marketed the product as "Liquid Paper". Almost simultaneously in Germany, Wolfgang Dabisch was dealing with the question of how to proceed with the correction of typing errors. Like Nesmith Graham, he also assumed a change of perspective: not the removal, in the sense of a subtraction, but rather the overcoat, in the sense of an addition, should eliminate the errors. And, like the secretary Nesmith Graham, the engineer Dabisch also had the materiality of the medium in mind. Dabisch developed little pieces of paper coated on one side with white, fine powder paint. His idea involved correcting typos with a duplication. If one positioned the little piece of paper where the incorrect character is and typed it again, the white paint would then come off in a way that covered up the error, and the newly formed blank space could be typed over. As a small-format correcting tool, Dabisch's invention was patented in the late 1950s and produced by Tipp-Ex, the company he founded. Along with correction paper, a short time later, correcting fluid was also sold under the name Tipp-Ex. Additionally, the company also produced correction ribbon and correction pens.

What is notable about these innovations and productions is the development of a cultural technique of deletion that does not assume the destruction of the whole system but, rather, focuses on making small corrections. It then becomes clear that "tools used to erase something, in their various forms, not only consider the nature of the writing utensils whose traces they are meant to delete but also, in equivalent fashion, consider the medium bearing the script."[9] Suddenly, the white page comes to view—and with it, the question of what material basis there is for the act of writing to be completed and transformed in the first place. At the same time, a shifting process occurs that is less interested in the cultural production of meaning by completed texts and

9 Nele Heinevetter and Nadine Sanchez, "Fragmente einer Geschichte des Löschens," in *Was mit Medien… Theorie in 15 Sachgeschichten*, ed. Nele Heinevetter and Nadine Sanchez (Paderborn: Fink, 2008), 154.

instead focuses more on the microstructural elements making up textual production. In the process, the whole is disassembled into its small and smallest elements, of which a few remain visible, while others can be covered up. In actuality, the application of white layers onto white surfaces provides for an increase of empty units, spreading whiteness as the condition of possibility for further operations of writing.

These forms of correction, nevertheless, are not themselves erasable but remain materially noticeable. It is striking that Tipp-Ex, above all, shows *where* something written was deleted or covered up. Here, the "Ex" of typing comes to light in a particular way: as the trace of a correction, as an indication of the process of revision itself. Decisive for this, then, are the material forms of the media participating in this process: paper, ink, correction fluid. Only through them, only with them and in them, does the operation of deletion then become observable—all independent of the question of what a text means.

When one puts aside the meaningful big and instead focuses on the concealed small, when one considers not the intentionally used characters but looks for the unintended traces, one then departs from the message and arrives at the medium. Sybille Krämer points out this connection and underlines: "The imprinting power of a medium […] unfolds in the dimension of a meaningfulness beyond the structures of conventional semantics. And it is the materiality of the medium that provides the basis for this 'excess' of meaning, for this 'surplus value' of significance, which is not at all intended by the users of signs and is not subject to their control."[10] Media can thus be inferred by the traces they leave—without one having to or being able to trace them back to a specific intention. Krämer emphasizes: "The medium relates to the message in the way that the unintentional trace relates to the intentionally used sign. […] The medium is not simply the message, rather, the trace of the medium is preserved on the message."[11]

Krämer's observations on the relation of signs and traces can be connected to the operation of deleting, for deleting is itself intimately tied to the trace—whenever we try to erase something, we simultaneously also enter something. We leave traces behind and thus also the rest that escapes deletion as ultimate destruction. This is precisely what the small form of Tipp-Ex

10 Sybille Krämer, "Das Medium als Spur und Apparat," in *Medien, Computer, Realität. Wirklichkeitsvorstellung und neue Medien*, ed. Sybille Krämer (Frankfurt am Main: Suhrkamp, 1998), 78–79.

11 Ibid., 81.

reminds us of: in removing traces of script, deleting agents themselves leave traces behind. It is no longer the presence of particular characters that come into play here, but their absence and superimposition by new traces.

This phenomenon of self-superimposing and mutually overwriting traces had already been described by Sigmund Freud in his "Note Upon the 'Mystic Writing-Pad'". In it, Freud develops a view of psychic and technical conditions that interconnect the functionality of the perceptual apparatus with medium-technical relevant operations. Crucial for their functioning is not solely the process of notation but also, and primarily, the bases of the notes it makes, or their material makeup. Freud explains this relation of its recording techniques on the basis of two processes:

> On the one hand, I can choose a writing-surface which will preserve intact any note made upon it for an indefinite length of time—for instance, a sheet of paper which I can write upon in ink. I am then in possession of a 'permanent memory-trace.' The disadvantage of this procedure is that the receptive capacity of the writing-surface is soon exhausted. […] Moreover, the advantage of this procedure, the fact that it provides a 'permanent trace,' may lose its value for me if after a time the note ceases to interest me […]. The alternative procedure avoids both of these disadvantages. If, for instance, I write with a piece of chalk on a slate, I have a receptive surface which retains its receptive capacity for an unlimited time and the notes upon which can be destroyed as soon as they cease to interest me, without any need for throwing away the writing-surface itself. Here the disadvantage is that I cannot preserve a permanent trace.[12]

Both recording techniques have advantages and disadvantages. Freud then describes the merging of both processes into a specific arrangement, which he bases on a child's toy—the Mystic Pad:

> The surface of the Mystic Pad is clear of writing and once more capable of receiving impressions. But it is easy to discover that the permanent trace of what was written is retained upon the wax slab itself and is legible in suitable lights. Thus the Pad provides not only a receptive surface that can be used over and over again, like a slate, but also permanent traces of what has been

12 Sigmund Freud, "A Note Upon the 'Mystic Writing-Pad,'" in *The Standard Edition of the Complete Psychological Works of Sigmund Freud, Vol. XIX (1923–1925). The Ego and the Id and Other Works*, trans. James Strachey (London: The Hogarth Press and the Institute of Psycho-Analysis, 1961), 227.

> written, like an ordinary paper pad: it solves the problem of combining the two functions *by dividing them between two separate but interrelated component parts or systems*.[13]

This systematization is where the essential achievement of the medium can be found: the Mystic Pad can not only take on signs and then remove them, it can also save them, it can layer the traces and thus retain them.

What concerns Freud here is the relation of provisionality and return, of disappearing and appearing, of absence and permanence—grand themes and techniques that become observable in the small example. Freud's interest in small things, the seemingly insignificant everyday objects, makes his approach adaptable to media theory and cultural analysis. For here, the essential question is that of textual meaning but that of the conditions and possibilities of its origin and subsistence. Similarly, the observation of writing also implies its own unique direction. It shifts the attention from the notes to the act of recording itself—and, with this, opens up the possibility of its own dynamics of knowledge:

> To understand recording as an act, as a process, as a procedure, means, first of all, to refrain from what is recorded and rather to pay closer attention to the gestures and practices, the materials and obstacles associated with recording. That the act of recording produces the recorded in the first place is not a trivial observation: for the techniques and procedures condition what can be recorded at all; and so, conversely, the recorded always bears witness to the procedures of recording.[14]

The processes of recording are closely tied with the practices of deletion, which, in turn, make their constitutive participation in that process seem rather small. The microscopic view, however, will not miss their central position in the cultural-technical framework of writing and saving. Deleting agents like Tipp-Ex ultimately leave their mark "on the carrier media by referring to the work of deletion they have done just as much as on the 'destroyed' script, of which remnants now and then, here and there, noticeably remain. Instead of erasing traces of writing, deleting agents save these, paradoxically, to the same degree that they delete them—as traces of traces, so to speak."[15]

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13 Ibid., 230.

14 Petra Löffler and Kathrin Peters, "Aufzeichnen. Einleitung in den Schwerpunkt," *Zeitschrift für Medienwissenschaft 3: Aufzeichnen* 2 (2010): 11.

15 Heinevetter and Sanchez, "Fragmente einer Geschichte des Löschens," 158.

Deletion procedures thus set in motion more than marginal corrections; they enable an accumulation of small references.

While those references are still visible and tangible in analog carrier media, their perceptibility seems to disperse in the digital age. Thomas Macho notes:

> In fact, it looks as if an era in the history of script carriers has come to its logical end with the advent of computers and electronic networks. This is why computers […] are the true "Mystic Pads" that Freud interpreted merely as metaphors for the structures of the unconscious mind, without considering the possibility that the history of cultural techniques and the script carriers, for its part, constitutes and differentiates between […] the functions of consciousness. Computers are possibly not at all instruments of knowledge presentation but, plain and simple, the instrument-based forms in which knowledge itself evolves and circulates without requiring instances of authorship any further.[16]

If this is true, what function and meaning should the analog deleting agent Tipp-Ex still have? Should it not have already disappeared a long time ago?

It may well be that Tipp-Ex must grapple with its own deletion in the digital age as a tool for making corrections for analog script media. It is likely that these circumstances are the very reason why it is now, in a phase of uncertainty and upheaval, extensively dealing with its own characteristics. And it is likely that the preferred form for this is the small format. At any rate, this is what an interactive video campaign suggests that has recently brought Tipp-Ex back onto our screens. As a type of aesthetic reflection, this advertisement shows what it means to not only understand Tipp-Ex as a medium of deletion but also as a source of knowledge for digital transformation processes.

The advertisement in question was released and circulated in 2012, the year that the world was meant to end, the supposed erasure of the universe. On a website that looks like a conventional YouTube video, a hunter and a bear can be seen with a birthday cake.[17] Suddenly, a meteorite approaches that threatens to destroy Earth. While the protagonists start to panic and run to and fro hectically, two buttons appear on the screen: "End the Party" and

16 Thomas Macho, "Shining oder: Die weiße Seite," in *Weiß*, ed. Wolfgang Ullrich and Juliane Vogel (Frankfurt am Main: Fischer, 2003), 26–27.

17 See TippExperience2, "Hunter and bear's 2012 birthday party," YouTube video, 0:35, April 11, 2012, http://www.youtube.com/watch?v=eQtai7HMbuQ.

"Don't End the Party." Users can decide how the rest of the video plays out. When selecting the option "Don't End the Party", a new window opens. Now, the bear appears on the left side of the screen, equipped with the product he is meant to be advertising: the Tipp-Ex "Mini Pocket Mouse," a small-format correction ribbon dispenser. The bear hands the Tipp-Ex to the hunter, who uses it to erase the year in the title of the video and then places it in an adjacent display window. He then declares to the viewer: "Quick! Enter any year you want with your keyboard, and let's replay the party." The user can now enter any year he or she wants and send the hunter and the bear on a journey through time.

The point of this short video is not so much explained by the hints in the dialogue but rather clarified by the written display in the advertisement window on the right: "Tipp-Ex: White and Rewrite." As a small form of advertisement, its slogan features a remarkable type of concentration. "White and Rewrite"—this is not only a particularly catchy and rhythmic rhyme form, it is also, in fact, a media-reflexive theorem. The notion of the white page may still exist. However, if it is transferred from the materiality of paper to the type field of the computer, writing and, therefore, text production, are radically changed.[18] Vilém Flusser emphasizes this transformation and points to the increased variability of the text, the exponentiated possibility of intervention, and the extension and expansion of previously stable distinctions linked to it. Flusser notes:

> Writing on paper limits one's creativity. […] When writing into an electromagnetic field, however, the creative text will also form lines, but these lines will no longer run clearly. They have become 'soft,' plastic, manipulable. One can break them up, for example, open windows in them, or make them recursive. The end points inscribed in them can just as well be seen as starting points. […] The text is no longer, like on paper, the result of a creative process, but it is itself this process, it is itself a processing of information into new information.[19]

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18 Cf. Martin Stingelin, "Understanding New Media Through An Old One: Die Geschichte des (literarischen) Schreibens im Licht seiner digitalen Revolutionierung," in *Das Gesicht der Welt. Medien in der digitalen Kultur*, ed. Lorenz Engell and Britta Neitzel, 31–49 (München: Fink, 2004).

19 Vilém Flusser, "Hinweg vom Papier. Die Zukunft des Schreibens," in *Medienkultur*, ed. Stefan Bollmann (Frankfurt am Main : Fischer, 2008), 63.

One of the most important characteristics of this new type of writing is the fact that it makes text movable. Changes and corrections are no longer exceptions but the rule. Digital text editing no longer assumes a fixed final state: what is written can also always be rewritten. Furthermore, the fact that the text can be forwarded and processed effortlessly makes it available to other writers and thus expandable: it moves into the realm of the collective and collaborative. Pierre Lévy stresses:

> In order for collectives to share meaning, it is not enough that each of its members receives the same message. The role of collaborative software is precisely to share not only texts but also the networks of associations, annotations, and comments within which they are understood by everyone involved. As a result, the constitution of a common meaning is made visible and quasi-materialized: the collective elaboration of a hypertext.[20]

It is not only the grand theories that are able to formulate such observations. Rather, the possibility of reflecting on changed conditions of meaning production and circulation is also manifested in the small, in the supposedly banal and quotidian. The advertisement for Tipp-Ex even seems to be particularly of interest and suited for determining this relationship—and not least, therefore, because, typical of consumer culture, it does not hide its message in its depths but resolutely forces it up to its surface. As an example, one can see in the advertisement the transformations to which the small form of corrections in the age of the digital is subject and which transformations this form itself creates.

Here, the form of advertisement, or to be more exact, the advertisement *clip* is relevant to us. Advertisement clips are a central component of popular culture and mass consumption. Their line of development reaches back to cinematographic trailers and television commercials, where their compressed organizational form unfolded within specific media environments: in cinema as a sequence, in television as a segment. In both cases, the consumer's active intervention is excluded. This principle is fundamentally transformed in the realm of the digital. The decisive foundations for this change are processes of networking and interaction.

Already the basic structure of the Tipp-Ex ad suggests that interaction is essential for it to work: when clicking on the YouTube video, the user is in-

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20 Pierre Lévy, "L'hypertexte, instrument et métaphore de la communication," *Réseaux. Communication – Technologie – Société* 46–47 (1991): 64.

stantly asked to participate in it. The controlling intervention here initially consists of the possibility of influencing the course of the narration by providing certain information. In a window overlaid with virtual Tipp-Ex, any random year can be typed in—and, already, one can see another clip. One can thus not see a single clip, but instead experiences a variety of forms of self-operated entry and transfer.

In the process, it is notable that the invitation to break up the coherent plot is initiated by means of a movement that reaches beyond the frame of the individual image. This becomes clear the moment the hunter breaks through the boundary of the fictional diegesis and reaches out of his window into another. In doing so, the frame of the YouTube clip window on the left side of the screen is mediated to the frame of the product advertisement on the right side of the screen: the hunter grabs the Tipp-Ex Mouse and transfers it from its static presentation frame to the interactive input field. There, the application of the correction agent forms the basis for a white inscription surface, which then makes it possible to type in the numbers of a year via the computer keyboard.

Another example of the interactive intervention of the user is the aesthetic modulation of functional control elements within the individual clips. In this way, the fall of the Berlin Wall in 1989 can be brought about by the viewer the moment he or she moves the timeline's cursor at the bottom of the clip window to the right ("drag to break the wall"). Again, the frame is transgressed, again supposedly stable boundaries are dissolved—on the one hand, those of the image format as a closed fictional universe, and on the other hand, those of the user interface as a purely functional display element. A further example can be found in the clip from the year 1233. Here it is the volume control whose purpose for regulating the auditory output is reshaped. As an aesthetically redesigned element, it appears as an intervention option for the user to move a sword ("drag to pull the sword").

Both examples show how the frame, which defines the events onscreen as a self-contained entity, is repurposed and thus redefined. Through the interaction of the user, the separation of the viewer and the viewed, for which the frame actually stands, is suspended. Instead of viewing the fictional universe from a distance, the users themselves intervene and thus refer to the specific quality of digital audiovisuality: it is not only capable of deforming individual image elements; it also allows for breaking up the boundary between passive consumption and active production.

Along with the aforementioned interactive processes, the Tipp-Ex ad also features types of networking through media. The stories of the hunter and the bear are not to be found solely on YouTube but can also be shared from there. Directly under the ad window with the product presentation, there is a set of options to share clips. After clicking on an option, the ad leads to Facebook or Twitter, where users can access and share them again. Obviously, the digital advertisement clip is able to create knowledge about the routines of its reception. This includes the processing of a self-knowledge of access, but, moreover, also the reference to the intermedia reach of the phenomenon beyond the limitations of the individual medium.

Due to its extremely compressed form, the digital clip seems to have developed an increased awareness of its own switchability. It is not only capable of displaying this knowledge but also of making it productive. The digital user's limited resources of time and attention are expanded by means of viral processes, in other words, transmitted from the small to the big. Instead of confirming the limited duration of the YouTube clip by making it self-contained, the Tipp-Ex ad shifts to the multiplicity of versions—both within its own limits and beyond them. Put another way: the process of proliferation affects interaction on multiple levels, it extends across the immanent and transverse figuration of multiplication.

This becomes clear, on the one hand, by the enhancement of the one story (a birthday party in the year 2012) with a variety of versions (alternate birthday parties from the middle ages to the future). These versions now appear not as discarded possibilities but remain present and retrievable as elements of a fictional universe. On the other hand—and this is another way of going beyond the stability of the limited—what has been multiplied is then transferred from one presentation platform to the next: from YouTube to Twitter and Facebook, where further forms of reception such as comments, links, or video responses spread out.

In this context, it is helpful to tie the spread of the small form to transmission by a small unit: the virus. The advertising industry understands viral marketing to be a way of influencing the market that uses social networks and digital platforms to disseminate information like an epidemic. For media theory, not only the implementation, but also the interpretation of this phenomenon, is of interest. "Viruses," note Ruth Mayer and Brigitte Weingart, "recode foreign operating systems for their own purposes and thereby

undermine asymmetrical power relations."[21] In the context of the digital, this applies in particular to the non-linear and, therefore, non-directional form of a transmission only possible with web-based forms of interaction and collaboration.

Crucial to this is the double process of information circulation: in the digital chain of transmission, every link acts simultaneously as a receiver and transmitter of the pathogen. It is therefore unsurprising that the virus concept is taken into account where it concerns the destabilization of established hierarchies and the overcoming of system limitations. Of particular importance here is the self-replicating power of infection, or more precisely: its dynamic adaptability. Mayer and Weingart note on this: "The logic of infection cannot be understood in the terminology of individuality, directionality, and linearity. Rather, it is constantly creating new supra-individual, flexible, and momentary nexuses and complexes."[22] This principle of non-linearity and flexibility is not only driven in the Tipp-Ex ad through marketing techniques but also reflected in its motifs. The relation between *story* and *history* is particularly striking in the clip. The ad not only concerns the network-like dissemination of forms of multiplication, it primarily concerns the suspension of the arrow of time as a temporal paradigm. This applies to both the narrative as well as to the historical distortion of its story. In the universe of the Tipp-Ex advertisement clip, there is no monodirectional continuation of the temporal, there is no linear development of events. The (hi)story is not fixed but constantly changes. It observes, questions, and expands itself; it revises, edits, and reworks itself. This is where the digital comes into its own—in the sense that it is the characteristic principle of digital construction that its results are subject to constant updates. The digital always already bears the possibility of revision within itself, it is aware of its own temporary nature and, in the process, recognizes that it could also always be something else.

It is the creative processing of this realization that constitutes the reflexive potential of the Tipp-Ex advertisement. The digital clip does not only follow the conditions that constitute it but also makes them recognizable as a simultaneity of recourse and anticipation. For, on the one hand, Tipp-Ex (still) refers to the white paper page, which is indispensable as the basis for its deleting

21 Ruth Mayer and Brigitte Weingart, "Viren zirkulieren. Eine Einleitung," in *Virus! Mutation einer Metapher*, ed. Ruth Mayer and Brigitte Weingart (Bielefeld: transcript, 2004), 9.

22 Ibid., 25.

operations. And, on the other hand, both the slogan and the shape of the correction tape dispenser reveal a reference to digital deletion processes. The fact that the Tipp-Ex takes the form of a mouse in the digital age, i.e. closely resembles the shape of a computer device, is probably just as little a coincidence as the rhyme that the slogan makes with new writing processes: "White and rewrite." After all, computer programs are less about complete erasure than about multiple overwriting:

> Deleting on the computer, in particular, is a highly complex, almost impossible undertaking. Because the writing, which can only seemingly be made to disappear so easily, must de facto undergo multiple deletion processes in order to no longer exist as a trace and thus no longer be reconstructable. Interestingly, the deletion tools and programs of digital storage do not work by actually deleting data on a hard drive but by overwriting them. Once again, it becomes clear that any attempt to eliminate traces only multiplies them.[23]

The methods of deleting, along with their arrangements and apparatuses as well as their reciprocal interactions and effects, make up a complex process. It is subject to both material conditions and historical changes, each developing specific forms and functions. "Deleting is perhaps the central epistemic figuration of the twentieth century," Jens Schröter surmises in his "Notes on a History of Deleting."[24] And perhaps, one might add, deleting is also (and even more so) a central epistemic figure of the twenty-first century—an epoch that raises the question of what constitutes digital deleting and what should be deleted in the first place with a particular sense of urgency.

Therefore, it is just as helpful as it is insightful to look more closely at the small deleting agent Tipp-Ex and its aesthetic forms of reflection. For if, in the digital age, on the one hand, an infinite amount can be saved and, on the other, hardly anything can be deleted without residue, then this leads to a convergence of the written and the deleted, the drafted and the discarded. In the face of growing masses of data and expanded storage capacities, questions of preserving and discarding, of organizing and selecting text and image elements must be posed anew. One way to approach these questions is through small corrections.

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23 Heinevetter and Sanchez, "Fragmente einer Geschichte des Löschens," 159.

24 Jens Schröter, "Notizen zu einer Geschichte des Löschens. Am Beispiel von Video und Robert Rauschenbergs *Erased de Kooning Drawing*," http://www.theorie-der-medien.de/text_detail.php?nr=51.

Micro Movies
On the Smartphone Film as Media Miniature

Films are in motion. As moving images, they are subjected to movement and themselves create movement: this has been the case since the beginning of cinematography. But in the age of digitalization, films are far more mobile than they could have ever been in the industrial age: this applies both to their production and reception as well as to their distribution. This can be seen the most clearly in the smartphone film. Not only has the camera that we always carry with us in our smartphone become more mobile. What it records is also subject to mobilization, since it can be edited and viewed, shared and uploaded without any time delay or spatial separation.

In the smartphone film, medial mobility and mobile mediality merge. This raises questions: In what sense does the mobility of smartphone practices lend a specific dynamic to the compressed filmic forms it generates and drives? Which aesthetic innovations could emerge from it? And ultimately: How can one approach the medial mobility inherent in these processes both theoretically and methodologically? The following three sections will pursue these questions. The first section concerns medial transformation to which, on the one hand, mobile filmmaking in the digital age is subjected and which it, on the other hand, itself generates; the second section investigates the new filmic aesthetics constituted in and through the smartphone film, and the third section discusses the question of how the methods of examining mobile mediality themselves can be set in motion. In doing so, I assume that a new conception of the image arises with the operations and dynamics of mobile media practices—whereby the smartphone film does not proclaim this conception as fixed but constantly generates it through processes of mobility.

1. Mobile Practices

Films get something up and running—and can themselves run. They have long since left their traditional places and have emigrated from the film studio, the editing room, and the movie theater. If not in their place, then at least alongside them, new places and localizations are emerging. These include the everywhere and anytime, i.e. the possibility of shooting and watching films via mobile media at any location. The primary characteristic of mobile practices is thus the increased availability of the means of image production. Digitization facilitates not only the consumption but also and above all the production of images. Although the development of amateur cameras had already begun around 1900 and has expanded continuously ever since—from the easy-to-use cameras of the home movie era to the camcorders of the video age. Nevertheless, only the integration of digital cameras into portable devices with mobile broadband has led to a use-specific dissemination that has made filmmaking attainable for more and more parties. Mobilization is then accompanied by an increase in efficiency and speed. In the process, the computing capacity of image-generating machines plays a crucial role. It organizes not only the length but also the quantity of possible recordings: whereas the film reel or videotape come to an end, the digital recording apparatus allows for the potentially infinite.

These innovations are connected to the second characteristic of mobile practices: advanced editing. Images are now more mobile not only in relation to their production but also in relation to their editing. Here, the basic increase in digitalization involves direct access to the image material. Every edited version can be displayed on the screen immediately and can also be revised at the same time. This is where digital editing differs from analog editing in a critical way, namely, the removal of the picture lock. "The plus of the digital image," Lorenz Engell points out, "always lies in its de- and recomposability, i.e. in the fact that the image is precisely not the final state, not the valid version […] and, not least for this reason, cannot be a document—except for that of the state of processing itself."[1] Its specificity, following Engell, "its unique characteristic, differentiating it from all other images, therefore, is

1 Lorenz Engell, "Die Liquidation des Intervalls. Zur Entstehung des digitalen Bildes aus Zwischenraum und Zwischenzeit," in *Ausfahrt nach Babylon. Essais und Vorträge zur Kritik der Medienkultur*, ed. Lorenz Engell (Weimar: VDG, 2000), 198.

developed by digital images more as processes than as images."[2] This process-like quality applies not only to the individual image but also, primarily, to how it can be linked and connected. In this sense, digital editing of a sequence of images is also always already characterized by its status as something provisional. Accessing the images, selecting and recombining them, takes place by means of nonlinear control—via a process that, again, emphasizes the process-like quality of image manipulation.

This is accompanied by the third characteristic of mobile media practices: increased distribution. Smartphone films can not only be immediately edited but also readily shared: they can be sent to individual recipients, made available on video platforms, or posted on social media sites. This is where we find the connection between mobility and connectivity as a characteristic that clearly distinguishes smartphone film from any other form of mobile film practice. Because the smartphone film can be shared immediately, it is also available to others and can thus be expanded. Thereby, it moves into the realm of the collective and the collaborative. This has less to do with the fact that a smartphone film can be seen by as many users as possible in as many locations as possible; rather, the important aspect is the fact that it can be further manipulated with additional operations. Pierre Lévy points out:

> For communities to share meaning, it is not enough that each of their members receives the same message. The role of groupware, rather, entails collectively creating not only texts but also networks of associations, annotations, and commentaries into which anyone can enter them. As a result, the constitution of a common meaning becomes visible and practically materialized.[3]

Not only can smartphone movies be easily distributed, they can also provide clues to their meaning-making via the comment sections and discussion forums associated with them. As a mobile media practice, the smartphone film is also characterized by its ability to diffuse into other media systems, in other words, it can be placed into new contexts beyond established boundaries. These contexts and settings are now, in turn, highly mobile—not only because old comments can be deleted and new ones added, or because new comments can reconfigure the old ones, but also because the connections between images, films, and texts in the digital dispositif are never complete but

2 Ibid., 197–198.

3 Pierre Lévy, "L'hypertexte, instrument et métaphore de la communication," *Réseaux* 9, no. 46–47 (1991) : 64.

can always be updated. Social media sites, video platforms, or discussion forums on the Internet broaden the framework of image and text structures. They expand it and thereby allow for the transition from the stable, inalterable organization of meaning to the processual form of meaning generation.

Mobile media practices of smartphone films are characterized by the fact that they no longer rely on stable or exclusive locations—places of production, editing, and distribution. Rather, their unique quality consists of a specific type of mobility—a mobility of devices, users, processes, and transmissions. This profound change has consequences not only practically but also aesthetically. One basic assumption of media theory is the fact that textual artifacts cannot be considered independently from the practices and procedures of their production. If it is true that the new possibilities of mobile media practices are connected with a new filmic understanding, then this understanding would have to be extended to the question of the formation of new modes of representation and staging. These, in turn, would have to turn away from old practices and disrupt them in order to become observable as new. It is precisely these moments of disruption that will be of interest in what follows.

2. Mobile Aesthetics

Let us begin with the first mobile example. On the one hand, it exhibits the new camera mobility, its liberation and potential boundlessness, and, on the other hand, its disruption, in the sense that it involves the breakdown of a regulated process. The example, "Seagull Steals a Camera," can be found on YouTube.[4] In only one minute and 39 seconds, the action unfolds in a rapid and surprising way.

An evening in Cannes. A camera is rolling. The unchanged frame suggests that it is statically aligned; presumably, it is lying on a table where someone is eating dinner. But, unexpectedly, an inversion occurs. A seagull suddenly appears, walks up to the device, grabs it with its beak, and flies away. While the bird was initially placed before the lens and visible as a recorded object, it now abruptly transfers the recording situation into a new condition with its intervention. Carried in its beak, the portable camera glides over buildings

4 RealJap, "Seagull Steals a Camera," YouTube Video, 1:39, June 25, 2011, https://www.youtube.com/watch?v=gcEIMJl6cPQ.

and streets, opening up a veritable bird's-eye view. One can see different fields of view, dynamic pans, shifts between light and dark, fragments of wings and façades—and ultimately, after the seagull has landed on a roof and cast the camera to the side, a sight of the protagonist by means of a direct gaze into the camera. The bird squawks, pecks on the display a few times, and disappears as quickly as it had appeared.

As a small and inconspicuous recording apparatus, the mobile camera can be quickly purloined, removed from its actual purpose, and applied to new uses. The mobile camera is capable of not only expanding the scope of possibilities for recording but, simultaneously, of also calling into question the smooth flow of recording due to interferences. It is these deviations and irritations that bring to light what lies beyond the grand form of knowledge organization.[5] While meaning-making via a filmic recording had long been organized by a technological, instrument-based arrangement, such as the adaptation to the requirements of light and sound recording, now, the compactness of the dispositif provides for a more unevenly permeable recording situation. In a situation where no spotlights are set up, no sound recording equipment is employed, where a scene does not have to be specifically staged on a closed set, something unintended and unforeseen can always enter the picture. The moment of the incident is also a moment of the uncertain: it throws the medium back down to its foundations and thereby expands the boundaries of its horizon of expectations.

Following Béla Balázs, these foundations have always included "the mobility and constant movement of the camera"[6]—for Balázs, it is even one of the most important "basic elements of the optical language"[7] that film formulates and articulates. For the camera shows

> not merely a constant flow of new things, but also changing distances […]. And this pinpoints what historically is absolutely innovative about film art. There can be no doubt that film has *un*covered a new world that had been previously covered *up*. It has uncovered the visible world surrounding man and his relation to it. Space and landscape, the face of things, the rhythm of

5 On the productivity of "goofs" in media history and for media historiography, see *Goofy History. Fehler machen Geschichte*, ed. Butis Butis (Cologne: Böhlau, 2009).

6 Béla Balázs, "The Productive Camera," in *Béla Balázs: Early Film Theory. Visible Man and The Spirit of Film*, trans. Rodney Livingstone, ed. Erica Carter (New York: Berghahn, 2010), 98.

7 Ibid.

> the masses, as well as the secret language of mute existence. But film has not just brought new material into view in the course of its development. It has achieved something else that is absolutely crucial. It has eliminated the spectator's position of fixed distance: a distance that hitherto has been an essential feature of the visual arts.[8]

Balázs's remarks about the medium specificity of the filmic language, in other words, of its capability to capture movements not only in the image but also and primarily as movements of the image, can now be extended to include the fact that the suspension of distance in the age of smartphone films is transferred from the filmic image to its devices. The mobility of the seagull-camera is an example of this. As the snapshot of a movement, it shows the fluid alternation of positions beyond a meaningful, structured arrangement and thus relocates to "the purely visual nature of film [that] enables us to see that *indeterminate something*."[9] This creates an "image of knowledge that more significantly emphasizes the coincidences, contingencies, and arbitrariness over the planned and expected."[10] The incident is also an accident. It enables "the rejection of overarching orientations"[11] and shifts the viewer's gaze toward those blanks and gaps from which something new can emerge.

The second example also takes place within the context of unexpected new orientations. It is taken from the web series *Glove and Boots*, a puppet comedy show with its own YouTube channel. In the episode "Vertical Video Syndrome,"[12] the protagonists Mario and Fafa deal with a mobile media phenomenon that confounds familiar viewing arrangements. Here, too, an inversion takes place, or more precisely: the shift from landscape format to portrait format. The episode revolves around the observation that the mobility of a smartphone, that is, the movability of the camera's positioning, leads to

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8 Ibid., 99.

9 Béla Balázs, "Visual Linkage," in *Béla Balázs: Early Film Theory. Visible Man and The Spirit of Film*, trans. Rodney Livingstone, ed. Erica Carter (New York: Berghahn, 2010), 67.

10 Bernhard J. Dotzler and Henning Schmidgen, "Einleitung: Zu einer Epistemologie der Zwischenräume," in *Parasiten und Sirenen. Zwischenräume als Orte der materiellen Wissensproduktion*, ed. Bernhard J. Dotzler and Henning Schmidgen (Bielefeld: transcript, 2008), 7.

11 Ibid.

12 Gloves and Boots, "Vertical Video Syndrome," YouTube Video, 2:59, June 25, 2012, https://www. youtube.com/watch?v=Bt9zSfinwFA.

the dramatic expansion of videos that are recorded with phones held vertically. "Vertical Videos happen when you hold your camera the wrong way," Mario states, "Your video will end up looking like crap." Surrounded by numerous vertically recorded cellphone videos, Fafa then explains the real threat posed by these increasingly emerging new forms. They are not only faulty and ugly to look at but also do not fit into established image and viewing conventions: "Vertical Video Syndrome is dangerous. Motion pictures have always been horizontal. Televisions are horizontal. Computer screens are horizontal. People's eyes are horizontal. We aren't built to watch vertical videos."

This observation shows Mario and Fafa to be media-historically trained viewers: They have a clear eye for historically varying recording technologies and presentation systems, that is, for those ensembles that specifically produce and organize viewing positions and viewing conditions. Their particular attention to the horizontal picture format as the metric for what is aesthetically acceptable is shown to be a guiding value in a double sense. It establishes the horizontal orientation of images and screens as an unquestioned basic condition according to which the medium is arranged and aligned, and it makes whatever contradicts this definition an undesired deviation from the norm.

Therefore, vertical videos are in fact dangerous. Their increased occurrence suggests that we are not dealing with an isolated incident but numerous instances of the same blunder. After all, Mario and Fafa do not speak of a symptom but of a syndrome, in other words, not of individual signs of interference but, rather, of the simultaneous appearance of various defects. The actual expansion lies in this accumulation of blunders since disruptions not only have an irritating effect, but also a catalyzing one. They are innovative, in the sense that they request new procedures when dealing with moments of interference. Such procedures could, on the one hand, exclude everything that does not fit established formats or, more interestingly, make it productive. For this would show that new forms do not merely imitate old ones but lead beyond them. They would then seek new perspectives and develop their own dynamics, in other words, they would reflect on their medial specificity, on what they are, what they are capable of, and what distinguishes them from other previously established forms.

The third and last example of the mobile aesthetic represents the transition from the experimental phase, with all of its interferences and irritations, to the establishment of its own visual style. The example is the smartphone app Vine, released in January 2013, which developed into its own social net-

work. Its principle was both simple and compact: users of the app could record six-second videos, which the software would transfer into an endless loop. The recording runs exactly as long as the user's finger is touching the screen; the editing (if one can still call it this) would thus be integrated into the recording apparatus and the recording duration limited. The finished films would then be published on the Vine platform, where they could be accessed and shared.[13]

Vine also featured the aforementioned shift from horizontal to vertical filming; in Vine, however, it did not appear as a sudden irritation but as a phenomenon that has become self-evident. This is shown, for example, in a stop-motion clip that presents an animated puppet vertically aligning an iPhone on a flexible mini tripod.[14] The puppet approaches the tripod, fixes the device, adjusts it a bit until the right position is found, and then runs in front of the camera to pose as the subject. Here, an aesthetic reflection on the newly autonomous smartphone film, which no longer needs to borrow from other media, manifests itself. Moreover, the way the puppet moves the iPhone to the flexible tripod refers to the production process itself: the stop-motion trick is accomplished by an illusion of movement, where the mobile device is kept still in order to capture individual frames of motionless objects and then set them in motion again.

In contrast to stop-motion processes, which split up film into its smallest recording segments, uncut recordings were also possible on the platform. They would often feature short, everyday scenes that were nevertheless prolonged by the loop. What escapes our attention at first can perhaps only be caught through the repetitive continuous loop. In a clip with the title "Simple Pleasures Café,"[15] for example, the fleeting and ephemeral nature of the smallest movements (the light dancing of a curtain, the combination of static and kinetic shadows, the arrangement of images and objects, the interweaving of interior and exterior) marks a transition from the everyday to the aesthetic.

Furthermore, complex narratives can also emerge—such as in the Vine video "…then I woke up in Calgary" from the Hollywood actor Adam Gold-

13 On this topic, see for example Elke Rentemeister, "Snap!" in *Kurz & Knapp. Zur Mediengeschichte kleiner Formen vom 17. Jahrhunderts bis zur Gegenwart*, ed. Michael Gamper and Ruth Mayer, 367–389 (Bielefeld: transcript, 2017).

14 Ian Padgham, "Untitled," Vine Video, May 30, 2013, https://vine.co/v/bYwPIlulipH.

15 Lisbetho, "Simple Pleasures Café," Vine Video, February 8, 2013, https://vine.co/v/bnFwEFVL zxF.

berg.[16] The video shows the distorted perspective of a dreamlike scene. It presents a situation that oscillates between tracking and panning shots and combines alternating spatial and landscape impressions: a complex superimposition of segments of reality and fragments of perception. It is unclear where the dream begins and ends, where consciousness and unconsciousness meet. In a maelstrom of visual impressions, the loop spins into an endless imbalance.

Ultimately, images from smartphone films can also make reference to images from other films. This is shown, for example, by the animated nightmare of an Oreo cookie[17]—a vision of horror inspired by *The Shining* (Stanley Kubrick, 1980). The recurrent subliminal image of blood pouring out of an elevator in the Overlook Hotel in Stanley Kubrick's film is now, in the Vine video "The Spilling," a giant wave of milking flowing toward the Oreo.

What this short selection shows is that the mobile aesthetics of the smartphone film is beginning to develop its own media quality. In the process, smallness and shortness, movement and mobility, play a central role. Smartphone films are related not to the cinematic dispositif but to the conditions of mobile screens and viewers: their images are learning how to walk by being carried around. Beyond long-form storytelling, such as the narrative feature film or the serial narrative of a television show, they operate with a short attention span and limited means of production. Their characteristic feature is the temporary and malleable, their hallmark their volatile visuality.

Smartphone films can only be described as micro movies in distinction to the tradition of long films, to which they relate in a special way. In the early days of cinematography, the brevity of films was a basic technical condition. The capacities of early film technology regulated the duration of the recording, so that a comparison to longer forms was impossible. Brevity was not a deliberately chosen form of condensation but the aesthetic norm.[18] With the development and solidification of the long form into a narrative convention, a change occurred in subsequent decades that marginalized the short form

16 Adam Goldberg, "… then I woke up in Calgary," Vine Video, December 7, 2013, https://vine.co/v/hxYxbTKDXQA.

17 Oreo Cookie, "The Spilling," Vine Video, October 28, 2013, https://vine.co/v/hDq2L9PeVTX.

18 For more, see also . Ruth Mayer, "Clipästhetik in der Industriemoderne. Das frühe Kino und der Zwang zur Kürze," in *Kurz & Knapp. Zur Mediengeschichte kleiner Formen vom 17. Jahrhunderts bis zur Gegenwart*, ed. Michael Gamper and Ruth Mayer, 251–267 (Bielefeld: transcript, 2017).

and almost completely pushed it out. Its return has come about with media modalities that have only become technically possible and aesthetically compatible in the age of digitalization. It then becomes clear that the forms of micro movies transcend those categories that film theory traditionally employs for the interpretation of film texts: namely work, author, and narration. How could this be approached methodologically? This is what we will address in the following section.

3. Mobile Methods

The unique mobility of the smartphone film, its mobile mediality, leads us to then ask about the mobility of theoretical approaches. If we make no progress with the established categories of film analysis—what approach could we then use?

The first possibility would be, in recourse to the first section, to more closely examine the new practices of mobile filmmaking. Micro narratives that develop in and through the smartphone film are connected to a transformative mobility that is based on the smallness of such devices. With the smartphone, we always have both the camera and the screen at our fingertips: we hold the entire apparatus in our hand, making it work and keeping it in motion. This is not an insignificant detail but, most likely, the beginning of a new era of how we *grasp* film. While the activities of the filmic hand had once been in a certain sense "outsourced" and were limited to the specializations of the cinematographer, the editor, or the projectionist as the collective control center of filmic operations, we now all have the capacity to actively become manual producer-users. Furthermore, our hands move closer and closer to the images themselves. Unlike the separation between viewer and screen required by the classic projection screen, one that requires distance between the two, the touch screen invites users to touch the screen and thus to move their hands.

Miniaturization and mobilization are therefore of interest because they shift the focus to the haptic and thereby to what makes the smartphone so "handy." Here, the hand has received a new set of actions; it is thus worthwhile to more closely examine its practices and procedures in the age of digitalization. Michel Serres has proposed one way to accomplish this. In his book *Thumbelina: The Culture and Technology of Millennials*, he describes the members of the networked generation as Thumbelinas—because of their ability to ac-

cess the world via the touchscreens on their smartphones. The Thumbelinas, writes Serres, "inhabit the virtual. […] With their cell phone, they have access to all people; with GPS, to all places; with the Internet, to all knowledge. They inhabit a topological space of neighborhoods, whereas we lived in a metric space, coordinated by distances."[19] Interestingly, Serres also connects this system of neighborhoods and proximate relationships to the practices of reading and writing. He recognizes in them a shift from pages to swiping, from the formatted, definable paper page to the scrolling text, from distanced consideration to involved grasping.

This addresses an important field of reference—and, with it, the hand conditioned by touch screens and multisensory media. In the digital age, grasping and comprehending the world is substantially organized by tactile techniques: by finger skills and manual practices that no longer assume distance and delimitation but proximity and tangibility. This is precisely where a media theory of the mobilized digital image could begin. It would have to investigate the status of tangible images, their malleability and variability, for example, when we not only retrieve images with our smartphones but drag them larger or smaller with our fingers, when we can bring every image we see into contact with another image. It would thus have to ask what occurs when images are no longer determined by the form and format of the classical film dispositif but are generated and made accessible through tactile processes—and furthermore, what occurs when the sensory modalities of visuality and tactility no longer are no longer regarded as separated spheres but are mediated to each other through touch.[20]

For film theory, which has long concentrated on the primacy of the visual, this necessarily presents a challenge. An ideology of the gaze, which asserts seeing as the preferred access point to knowledge or as the guarantor of transparency, is opposed by the apparatus-conditioned upswing of tactility: here, something emerges that escapes the eye. In the experienceable space of tangibility, perceptible things are newly arranged on a level separate from the viewer and the human eye. In the process, that which can be made sense of

19 Michel Serres, *Thumbelina: The Culture and Technology of Millennials*, trans. Daniel W. Smith (London: Rowman & Littlefield, 2015), 6.

20 On the mediality of the relationship between visuality and tactility, see Lisa Gotto, "Kontaktieren. Zur medialen Begegnungszone von Visualität und Taktilität," in *Die Medien und das Neue*, ed. Daniela Wentz and André Wendler, 17–28 (Marburg: Schüren, 2009).

by touching requires a particular form of participation. The recipient is no longer a passive onlooker but an active participant: he is mobilized.

Whoever is touching something remains in motion. The mode of perception of the tactile itself is constituted through processuality and variability. Unlike with an overview or overall prospect, what is to be touched is to be captured successively. Already in 1935, Erwin Strauss writes:

> The momentary belongs to any tactile impression, 'moment' understood both in a temporal sense and in the sense of movement. […] In the world of tactility, there is no coherent, fulfilled horizon; there are only moments, but also, because of this, the urge to go on from moment to moment. The tactile movement, therefore, becomes the expression of a restless and endless, never quite fulfilled approximation.[21]

Touching involves a process-driven exploration and investigation, an interminable movement within mobile constellations. The tactile does not imply the closed whole but something to be gradually explored, that is, something that is only emerging in the process of becoming. The fragmentary, the advancing from moment to moment, is made possible not least by a variable positioning. Through movement, the person touching is involved in a particular, specifically dynamic way and constantly on the move. Every stopping point is a potential starting point—not a conclusion, but a connection.

Here is where a mobile methodology would have to start. It would have to consider mobile media as agile arrangements that necessitate processual approaches. It would have to emphasize reflections on mobility, ubiquity, and connectivity and thereby repeatedly problematize these reflections. It would have to view birds as authors and understand flights as incomplete texts. It would have to be interested in non-linear narrations, in recursive rotations and loops. It would have to consider the mobility of potential archives complete with their deletable and expandable operations: tags, comments, and image links with or without words. It would have to mobilize its questions and focus its epistemological interests on the specifics of short and small forms.

As a media miniature, the smartphone film is characterized by a particular relationship to smallness. The compactness of the devices allows for a new type of availability: viewers become users, passive consumers become active producers. Furthermore, and this is crucial, small mobile devices not only

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21 Erwin Strauss, *Vom Sinn der Sinne. Ein Beitrag zur Grundlegung der Psychologie* (Berlin: Springer, 1978 [1935]), 361.

allow us to see things differently but also to absorb them in a completely different way. In this way, the fragments of everyday reality can be medially processed and made aesthetically productive. Through the ever-present smartphone camera, every moment, no matter how small, can be instantly captured and fixed, and even the incidental or temporary can be readily recorded and edited. This availability enables a type of bearing witness whose access point into the exploration of the world lies in the ordinary small. Siegfried Kracauer describes film's affinity for everyday life in the 1960s as follows:

> The small random moments which concern things common to you and me and the rest of mankind can indeed be said to constitute the dimension of everyday life, this matrix of all other modes of reality. It is a very substantial dimension. […] Products of habit and microscopic interaction, they form a resilient texture […]. Films tend to explore this texture of everyday life […]. So they help us not only to appreciate our given material environment but to extend it in all directions. They virtually make the world our home.[22]

What Kracauer accentuates here as a capability of film, namely the medium-specific ability to attach itself to small, everyday things and thus make them visible and accessible, appears to be enormously increased in the digital age. Because the smartphone is always handy, it makes things easier to handle in a unique way. As a result, a mobile understanding of the small arises, a movable type of filmmaking that finds its raw materials beyond the studio and in everyday routines. In this sense, micro movies, even more intense than their cinematic predecessors, are uniquely suited to "virtually make the world our home."[23]

Every small form is part of a history of forms that it adapts, interpolates, and transforms. What is essential for micro movies is that they do not simply rediscover the ephemeral but, rather, that they reformat it. Their aesthetic forms are embedded in the accelerative processes of the digital age, in the dynamization and condensation of fragments of information and narration. It is precisely this media disposition that gives rise to their special potential to epistemologically charge the short:

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22 Siegfried Kracauer, *Theory of Film: The Redemption of Physical Reality* (Oxford: Oxford University Press 1965), 304.

23 Ibid.

> What is formally due to the ephemerality of the moment and expresses an accelerated experience of time in a corresponding format simultaneously proves itself to be a small archive of a polychronic experience of time: the unavoidable difference between the presence, the presentness of the moment, and its simultaneous ephemerality and unavailability have perhaps never been more clearly experienced than in the age of an enormous circulation and density of information, as well as in the seemingly limitless potential technological access points to it.[24]

Micro movies are not only the results of a new practice of exploring everyday life but also an expression of moving pictures being disseminated beyond previously limited domains of production and reception. With the possibility of Internet-based networking, they form a new, kaleidoscope-like structure of visibility. In this sense, their smallness can be understood not as a fragment but as a segment, as a referential element that invites us to connect our own dots. Herein lies the particular potential of micro movies: with the snapshot-like incompleteness of the moment and the expansive capability of the web, the unfolding of our perceptive capabilities is driven process by process, and our vision is not only sharpened but also renewed and enhanced.

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24 Sabiene Autsch and Claudia Öhlschläger, "Das Kleine denken, schreiben, zeigen. Interdisziplinäre Perspektiven," in *Kulturen des Kleinen. Mikroformate in Literatur, Kunst und Medien*, ed. Sabiene Autsch, Claudia Öhlschläger, and Leonie Süwolto (Paderborn: Wilhelm Fink, 2014), 10–11.

Strike a Pose
Robot Selfies

Robots don't seem to be vain creatures taking snapshots of themselves. As functional machines, their purpose is to create a picture of the world without dwelling on the pleasures of self-presentation and self-admiration. However, robots have been taking selfies for quite a while. When Gigapan, a robotic camera mount designed to capture pictures of artwork for Google's Art Project, traveled through the world's most famous museums, it took a whole series of selfies by reflecting itself in the galleries' mirrors. Another prominent photogenic robot is NASA's Science Laboratory rover Curiosity. When it landed on Mars, it held its camera at robotic arm's length to take head shots: truly authentic selfies, as they seem.

Robot selfies raise questions about self-reflection and the concepts that are associated with it. Why does a robot take a selfie? What does it mean for a machine to capture and present itself? The first section considers the optical effect of reflection and its contribution to the formation of robotic self-depiction; the second discusses the process of technological transformation and the shift of knowledge constellations that is linked to it. The peculiarity of robot selfies, I argue, lies in their aptitude to mediate between self-reflection and self-transformation. Robot selfies exist both as an effect and an alternative mode of selfie culture. As such, they are a prime site for investigating not only the logics and aesthetics of selfies but also the future potential of digital media culture.

1. Reflection

Pointing to a long and relatively stable photographic tradition of visual composition, Paul Frosh refers to a central trait of spatial positioning in image making, namely the separation of the producer and the produced:

> One key feature of conventional photographic composition that has remained relatively unchanged across the analog-digital divide is the spatial separation between photographed objects and the photographer's body. The depicted scene is produced from a position behind the camera, a position almost always occupied by the photographer and subsequently adopted by the viewer.[1]

However, while this system of positioning has provided a strong force of ordering figures and elements in image space, it has always been open to breaks and fissures. One of these fractures within the pictorial logics of seeing and being seen concerns the optical effect of reflection.

When a camera is positioned in front of reflecting surfaces like windows or mirrors, it suddenly makes itself being seen. As an unexpected result, the recording device is integrated into the picture, thereby destabilizing the supposedly firm separation of displaying and being displayed. While these instances have often been regarded as unwanted mistakes or errors, it is also possible to consider them as reflections of one of the central properties of photography itself—that is, the efficiency to uncover what has previously been overlooked. Pointing to the predominant attributes of photography, Siegfried Kracauer accentuates the medium's affinity to the accidental. Instead of ordering things in a clearly structured compositional manner, photography lends itself to the unexpected and unplanned. Kracauer emphasizes:

> Photography tends to stress the fortuitous. Random events are the very meat of snapshots. […] In portraiture, by the same token, even the most typical portraits must retain an accidental character—as if they were plucked en route and still quivered with crude existence. This affinity for the adventi-

1 Paul Frosh, "The Gestural Image. The Selfie, Photographic Theory, and Kinesthetic Sociability", International Journal of Communication 9 (2015), 1611, http://ijoc.org/index.php/ijoc/article/view/3146/1388.

> tious again implies that the medium does not favour pictures which seem to be forced into an "obvious compositional pattern."[2]

Continuing this line of thought, Kracauer identifies the main quality of photography as the ability to "include things unknown to their maker, things which he himself must discover in them. […] The aesthetic value of photographs would in a measure seem to be a function of their explorative powers".[3] Photography, according to Kracauer, allows for capturing constellations that do not seem readily apparent. Hence, photos not only produce technological forms of depiction and delineation but also provide us with a perspective on mutable modes of perception.

Photography, which was developed within the framework of analog media, still proves to be an effective notion for wider discussion as a medium of explorative capacities and capabilities, especially with respect to the field of digital selfie culture. Emphasizing the increasing ubiquity of digital photography, Paul Frosh underlines:

> The selfie is the progeny of digital networks. Its distinctiveness from older forms of self-depiction seems to derive from nonrepresentational changes: innovations in distribution, storage, and metadata that are not directly concerned with the production or aesthetic design of images.[4]

Digital media provide new channels of distribution and dissemination of visual information. Hence selfies are closely connected to image sharing practices that rely on network systems and online communication. In this respect, selfies are always data-driven. According to Alise Tifentale, it is this correlation that differentiates the selfie from the photographic self-portrait in the traditional sense:

> Although the selfie is reminiscent of traditional photographic selfportraiture, its other essential attributes include metadata, consisting of several layers: automatically generated data (like geo-tags and time stamps), data added by the user (hashtags), and data added by other users (comments). Another, no less important attribute of the selfie is the instantaneous dis-

2 Siegfried Kracauer, *Theory of Film. The Redemption of Physical Reality* (Princeton, NJ: Princeton University Press, 1997), 22.

3 Ibid., 19.

4 Frosh, "The Gestural Image", 1607.

> semination of the image via Instagram or similar social networks that makes the selfie significantly different from its earlier photographic precursors.[5]

However, while these transformations seem to be clearly oriented toward medial proficiency and efficiency, they still make room for the unforeseen and unexpected—like the peculiar phenomenon of the robot selfie, which, in the first place, can be understood as an unforeseen form of visual reflection. Gigapan, Google's photographic robot, will serve as a comprehensive example.

Gigapan is a robotic camera mount that is used for Google Art Project. Its purpose is to capture gigapixel pictures as a way of providing virtual tours of the world's most famous museums. The technology behind Google Art Project, which was designed to document the interior equivalent of a Google Street View panorama, is constructed in a way that allows the recording apparatus to move autonomously through the galleries. Significantly, the camera robot is of human height, enabling it to take pictures at eye level and thereby permitting it to explore the exhibits as authentically as possible, meaning to simulate a human perspective. In addition to this claim for accuracy, Gigapan is draped in silvery cloth to prevent possible reflections of the robot's metal surface while taking pictures.

However, this precautionary measure proves not as effective as it is meant to be. In a blog called "The Camera in the Mirror,"[6] artist Mario Santamaria has compiled a collection of pictures where Gigapan catches glimpses of itself in museum mirrors, resulting in a series of bizarre robotic self-portraits (see Fig. 7).

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5 Alise Tifentale, 2016. "The Networked Camera at Work. Why Every Self-Portrait Is Not a Selfie, but Every Selfie Is a Photograph," In *Riga Photography Biennial*, ed. Santa Mičule, (Riga: Riga Photography Biennial, 2016), 76.

6 See Mario Santamaria's Tumblr account: http://the-camera-in-the-mirror.tumblr.com/ (accessed September 16, 2016).

Fig. 7: Mirror reflection of Gigapan (Google 2014)

What do these images signify? Do they evidence the robot's idle idiosyncrasy? In the first place, it should be noted, Gigapan's selfies come into being as a kind of machinic malfunction. Considering for Supposing that Google's technological system was constructed in order to represent without being represented, the sudden visibility of the robotic device is nothing but an error. Seen in this way, reflection comes to stand for confusion. While Google's engineers were certainly aware of the fact that the robot is prone to visual reflection and thus carefully designed an antireflecting cover to exclude that optical effect, they considered the problem from the vantage point of the object of photography—and not, as in the case of Gigapan's selfies, from the perspective of the photographing subject. Thus, the disposition of the machine-made viewing configuration exposes itself to be unstable. It does not exist as a clear-cut system of controlled and controllable knowledge but is in itself movable and modifiable.

As an unexpected result of technological arrangements and visual formations, the emergence of Gigapan's selfies can be understood as a prefiguement of new knowledge constellations. Commenting on his concept of a poetology of knowledge, Joseph Vogl outlines

> a perspective in which the emergence of new objects and areas of knowledge can be linked to the modes of their representation. A poetology of knowledge assumes that each order of knowledge produces specific possibilities of representation. It assumes that within each knowledge order, specific techniques are at work—techniques that determine the possibility and the vis-

> ibility of objects. […] Thus, objects of knowledge do not simply occur as the preexisting and stable referents of statements.[7]

Robot selfies are part of machine-made viewing configurations and likewise technological self-portraits. Significantly, they do not emerge from rigid knowledge constructions but develop in moments of dysfunction and disturbance. Their visibility is closely linked to flaws and errors that give rise to new machinic aesthetics. Only by these divergences and irritations can something be revealed that lies far beyond the borders of a stable knowledge system.

In this respect, the unexpected emergence of Gigapan's self-portraits can be understood as an operational logic that does not proceed predeterminedly but evolves experimentally. As Lorenz Engell has pointed out, the experiment is characterized by fundamental uncertainty. Instability and incertitude are the actual conditions of the experiment and the very foundation that allows the production of something new. Engell underlines:

> The experiment and the experimental thinking never really know what they don't know. Knowing and not knowing are, in this case, not organized in a dichotomic mutual exclusion. The operative question, the actual determination of the unknown and the uncertain, is often unknowingly installed within the experiment's setup, course and process.[8]

Transferring this constellation of knowing and not knowing to Google's Gigapan technology, it can be assumed that the system is able to produce something new in the precise moment when it disregards its intentional control and therefore allows the unintended to come into being. This process would no longer be linked to individual intentions like the developers' or programmers' objectives but would occur as a side effect resulting from the arrangement's susceptibility to flaws and errors.

Robot selfies are processes and products of what Hans-Jörg Rheinberger calls an experimental system, defining it as "a basic unit of experimental activity combining local, technical, instrumental, institutional, social, and epis-

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7 Joseph Vogl and Alwin Franke, "The Shamefacedness of Functional Elements. A Conversation with Joseph Vogl," *New York Magazine of Contemporary Art and Theory* 1.5 (2015), Accessed October 2015, http://www.ny-magazine.org/issues.html.

8 Lorenz Engell, "Fernsehen mit Unbekannten. Überlegungen zur experimentellen Television," In Fernsehexperimente. Stationen eines Mediums, ed. Michael Grisko and Stefan Münker (Berlin: Kadmos, 2009), 16; transl. L.G.

temic aspects".[9] Moreover, they are bound to knowledge constellations being constituted by the media dispositif that enables their formation—that is, they are not an additive element but a generative principle. As such they not only comprise instrument-based technical objects but also allow for the evolution of new insights and new understandings of what it means to be in pictures. Considering the constituents and constellations of the dispositif and addressing the emergence of the new, Gilles Deleuze mentions

> a change in orientation which turns away one's interest in the Eternal and towards the new. The new is not supposed to mean the same as the fashionable but, on the contrary, the variable creativity which arises out of social apparatuses [dispositifs]. […] Each apparatus is thus defined in terms of its newness content and its creativity content, this marking at the same time its ability to transform itself, or indeed to break down in favour of a future apparatus.[10]

Robot selfies can be understood as both relying on existing structures of a media dispositif and having the capacity to transform it to constitute a possible future apparatus. As we move into the digital domain, new modes of perception alter our way of seeing the world, such as being able to go on a virtual tour through museums as Google's Art Project offers, for example. As this transformation transgresses boundaries between human and machine, the robot selfie seems to be most appropriate to embody that change. Could it be that robot selfies point to the constitution of a new kind of digital subjectivity—one that is no longer bound to human command and control but emerges as machine image in its own right?

As we have seen, a first body of robot selfies can be ascribed to an unexpected error, meaning that a machine defies its programming by not only displaying the objects it is supposed to capture but also revealing itself.[11] Giga-

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9 Hans-Jörg Rheinberger, *Toward a History of Epistemic Things. Synthesizing Proteins in the Test Tube* (Stanford, CA: Stanford University Press, 1996), 238.

10 Gilles Deleuze, "What Is a Dispositif?," In *Michel Foucault, Philosopher*, ed. Timothy J. Armstrong (New York, NY: Routledge 1992), 163–164.

11 Further examples for this unit of robot selfies include two recent image series reflecting on the relation between machines and photographic selfexposure. In 2016, Spanish artist Daniel Armengol Altayó designed an art project titled "#artificialselfie." It was exhibited at London's Aram Gallery and displayed a robot in front of a mirror provided with a smartphone. The robot was programmed to take its selfies and post them on Instagram repeatedly. Although the machine did exactly what it was deter-

pan's self-depictions can be defined as robot selfies because they are pictures that show the machinic self and have been recorded by nobody but the machine itself. Although these images are conditioned by the workaround of a reflecting surface, other instances of robot selfies imply a structural change to this disposition. Bit by bit, robots seem to detach themselves from accidental selfies enabled by a mirror and move on to image constellations that are more than casual flaws.

2. Transformation

Some of the most popular robot selfies come from outer space. When Curiosity, a robotic rover designed as part of NASA's Mars Science Laboratory mission, was sent to Mars to explore the red planet, it sent some amazing self-portraits back to earth (see Fig. 8). Curiosity's main purpose is to investigate the Martian geology, including climate studies and observations of the mineralogical composition of the planet's surface. However, while being on its mission and following its scientific objectives, Curiosity has not only been gazing at Mars but also, and quite extensively so, at itself. Notably, the image's composition implies that the picture was taken by the robot's arm pointing to the robot's head—a selfie par excellence, as it seems. Although this may look like an amusing accident or just a casual by-product of Curiosity's overall goal-oriented work, there is actually more to that picture. This concerns, above all, the photograph's distribution and circulation—since in fact the ma-

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mined to execute, the unexpected error in this case turned out to be humans—that is, gallery visitors who happened to walk by and thus got into the pictures unintentionally (see http://www.architecturaldigest.com/story/robot-takesbetter-selfies-than-you-do). Another variation of the machinic self-portrait could be explored through drone selfies. As part of a larger art concept having been developed in 2014, the art collective IOCOSE displayed a photographic series of drones taking selfies by flying in front of a mirror (see http://www.iocose.org/works/in_times_of_peace.html). Significantly, these images differ from what has come to be known as a dronie (i.e., a selfie of humans shot via drone). Here the machines cease to serve the instrumental purpose of taking snapshots of people who want to avoid extending their arms or using a selfie stick. On the contrary, these drones "are definitely presenting their own images, taking photos to create and promote their public image," as IOCOSE stated in an interview (see https://creators.vice.com/en_us/article/now-even-drones-are-taking-selfies). I am grateful to Julia Eckel for bringing these instances to my attention.

chine not only captured a snapshot of itself but also spread it via social media, announcing it as a selfie and asking for response and comments.

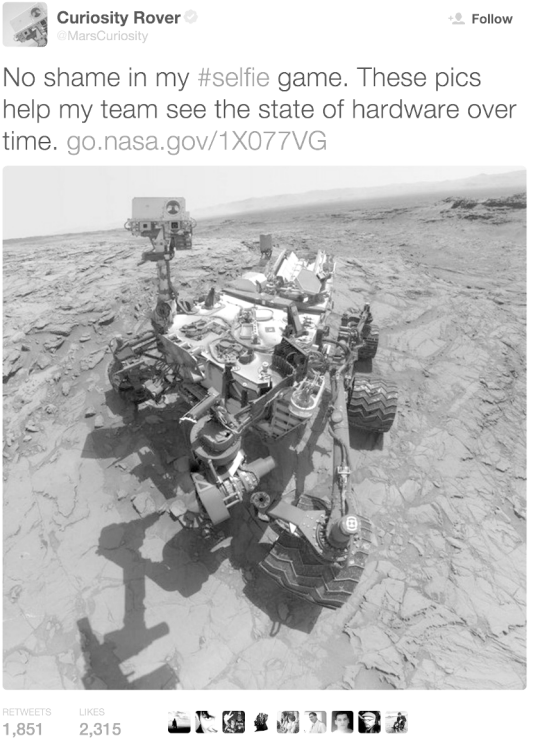

Fig. 8: Selfie of Curiosity sent to earth and shared on Twitter (2015)

Curiosity has its own Twitter account where it operates as @MarsCuriosity. Since its landing on the platform, the robot has posted over 3000 tweets, including the following from February 7, 2013: "How do I take selfies on Mars? By taking multiple pics w/ a camera at the end of my arm. Here's how it's done: http://go.nasa.gov/UHonU2"[12]. When following the link, Curiosity's self-staging is taken one step further, leading to a video that shows

12 Twitter.com (@MarsCuriosity), "How Do I Take Selfies on Mars? By Taking Multiple Pics w/ a Camera at the End of My Arm. Here's How It's Done: http://go.nasa.gov/UHonU2,"

an animation of the rover's arm movements for taking a self-portrait (see NASA Jet Propulsion Laboratory 2012).[13] It seems that some of the comments Curiosity got for its postings were reproaches, decrying the machine's narcissistic vanity rituals and articulating annoyance due to its multitudinous poses—however, the robot found the right way to answer critics by this tweet from October 13, 2015: "No shame in my #selfie game. These pics help my team see the state of hardware over time. http://go.nasa.gov/1X077VG"[14] (see Fig. 8).

Curiosity's tweet is evocative because, instead of sounding like a mere justification, it is actually a hint at the robotic selfie's underlying function. Just as human selfies have a lot to say about transformation, just as they tell us how our bodies and facial expressions change over time, robot selfies may be instrumental in providing information about the machine's modification and possible reactions to that alteration. Oliver Bendel underlines:

> Transformation will also likely become a key trait in robots. […] In a world where a robot may have to be small one day and tall the other, fast at one hour and slow at the next, or ugly in one second and pretty in the next, a selfie will allow a robot to remember who it is, whom it encountered with this appearance and what it did under this cover. Selfies will show a robot how old it has become, how much it has changed, and they will help it maintain its identity.[15]

February 7, 2013, Accessed March 20, 2017, https://twitter.com/MarsCuriosity/status/299698751415652352.

13 NASA Jet Propulsion Laboratory, "Animation of Curiosity Rover's Arm Movements for Taking a Self-Portrait," December 12, 2012. Accessed September 16, 2016, http://www.jpl.nasa.gov/video/details.php?id=1171#fragment-1. Following discussions revolving around how Curiosity takes selfies without getting its robotic arm in the picture, the Mars rover sent out another tweet on February 2015: "Selfie stick not required. How I take self-portraits + why my arm isn't in the shot http://youtu.be/b2rwWECbEHg?t=2m45s". See Twitter.com (@MarsCuriosity), "Selfie Stick Not Required. How I Take Self-portraits + Why My Arm Isn't in the Shot. http://youtu.be/b2rwWECbEHg?t=2m45s," February 24, 2015b. Accessed March 20, 2017. https://twitter.com/marscuriosity/status/570338044210847747?lang=de.

14 Twitter.com (@MarsCuriosity), "No Shame in My #selfie game. These Pics Help My Team See the State of Hardware Over Time. http://go.nasa.gov/1X077VG," October 13, 2015a, Accessed March 20, 2017. https://twitter.com/marscuriosity/status/653998124642406400.

15 Oliver Bendel, "Robot Selfies, and the Road to Self-recognition," June 9, 2014, Accessed September 16, 2016, http://robohub.org/robot-selfiesand-the-road-to-self-recognition.

The way Curiosity communicates its selfies demonstrates a significant change in image circulation. Robot selfies, it becomes clear, are not all about self-love and self-admiration. Furthermore, they point to the digital quality of the image: its programmability and processability. Digital images are always ready for analysis and evaluation. Their purpose is not only to depict and illustrate certain characters (be they humans or machines) but moreover to interpret the given information and to adjust it to the system. As such, the digital selfie is deeply intertwined with algorithmic structures, changing not only the way we represent ourselves but also the way we perceive an image per se. Referring to this fundamental change in digital image culture, William Uricchio asserts:

> The digital turn, and with it, increased use of location-aware technologies, has yielded innovative image applications and posed new questions about the status and value of the image. These applications rely on algorithmically defined relations between the viewing subject and the world viewed, offering robust alternatives to the visual economies of the past.[16]

Similarly, Eivind Røssaak has emphasized that "the machinic ground of the image (codes and algorithms) has become a reservoir for a plurality of expressions".[17] A profound transformation has taken place that increases technological possibilities of image modification and circulation. The digital image "is connected to a new technical matrix, an algorithmic culture, which interrupts the image not to analyse it in its unique singularity but to give birth to a potential multiplicity which is always more than one—and ready to change".[18] In this regard, algorithmically enhanced images are inextricably intertwined with agile and swiftly oscillating dynamics, indicating a wide array of further processing and further retransmission of data.

Although neither Uricchio nor Røssaak mention the specific potential of robots in this context, it seems useful to be reminded of a much earlier approach that discusses the constitutive participation of technology in experiencing and exploring the world through photographic means. In his essay "Towards a Philosophy of Photography," Vilém Flusser proclaims:

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16 William Uricchio, "The Algorithmic Turn: Photosynth, Augmented Reality and the Changing Implications of the Image," *Visual Studies* 26 (1) (2011): 25.

17 Eiving Røssaak, "Algorithmic Culture: Beyond the Photo/Film Divide," In *Between Stillness and Motion. Film, Photography, Algorithms*, ed. Eivind Røssaak (Amsterdam: Amsterdam University Press 2011), 194.

18 Ibid., 201.

> To be in the photographic universe means to experience, to know and to evaluate the world as a function of photographs. Every single experience, every single bit of knowledge, every value can be reduced to individually known and evaluated photographs. And every single action can be analyzed through the individual photos taken as models. This type of existence, then, in which everything experienced, known and evaluated can be reduced to punctuated elements (into "bits"), is already familiar: It is the world of robots. The photographic universe and all apparatus-based universes robotize the human being and society.[19]

Although we have to concede that Flusser's essay was published in the 1980s and that he deals with the idea of robots only briefly, his remarks of the function of automatically processed images are still illuminative because they divert the function of photographs from the intention of a single individual and redirect our attention to the logics of robotization. Getting back to Curiosity's selfies, we might transfer this idea to the purpose of robotic photographs: What is the function of a rover taking pictures on Mars? At first glance, the answer seems to be clear: These pictures serve the engineers on earth who want to check the conditions of the robot's shell, devices, and instruments. Additionally, the reflections on Curiosity's metal surface may tell them something about the Martian atmosphere; in addition, the imprints on the ground could provide information about the planet's soil, state, and mineral composition.[20] However, at a second glance, it is also possible to concentrate solely on the robot's profits, which may exist independently from the scientist's concerns and benefits. In this regard, by using photographic technology, Curiosity could gain knowledge about its location using the pictures it generated. It could, for example, as Oliver Bendel has pointed out, [21] use this information to optimize its movements, including the realization of danger behind or in front of itself.

At this point, our considerations of the function of a robotic photograph are still close to the purpose of the Mars mission—at least if we consider Curiosity to be a rover (i.e., a functional vehicle) and not a self-directed robot (i.e., an autonomous android). However, as Donna Haraway has notably pointed out, advancements in robot technology proved early on that the

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19 Vilém Flusser, *Towards a Philosophy of Photography* (London: Reaktion Books, 1983), 70.

20 Bendel, "Robot Selfies, and the Road to Self-recognition".

21 Oliver Bendel "Roboselfies. Telepolis," February 1, 2015. Accessed March 23, 2016. https://www.heise.de/tp/features/Roboselfies-3369411.html.

sharp distinction between functional machines and humanlike organisms has already collapsed. Haraway emphasizes:

> Late twentieth-century machines have made thoroughly ambiguous the difference between natural and artificial, mind and body, self-developing and externally designed, and many other distinctions that used to apply to organisms and machines. Our machines are disturbingly lively, and we ourselves frighteningly inert.[22]

Taking into account the fact that Haraway's manifesto, just like Flusser's essay, dates from the 1980s, her stance on the "disturbingly lively" machines appears even more plausible today, given that current algorithmic culture allows for considerable advancements in the development of intelligent robots. Let's assume for a moment that Curiosity is less a vehicle and more a humanoid robot that moves and learns autonomously: How could it benefit from its selfies? Quite clearly, its self-representations could lead to more self-esteem and even self-awareness. The robot could reflect on its looks and gestures and by doing so optimize its behavior.[23] Additionally, by comparing these expressions to human faces, it could enhance the credibility of its outer appearance and continuously extend the potential of its expressions.

It seems, however, that planet Mars does not provide ideal conditions to do so—unless Curiosity communicates with Martians. Still, down on earth, there are robots interacting with humans and obtaining feedback via selfies. Recently, for example, a friendly robot called Hitchbot caught international attention while hitchhiking across Canada and Europe (Fig. 9).

Hitchbot was created by a team of roboticists from Ryerson University and McMaster University in Canada in 2014. The robot has some anthropomorphic features, such as two flexible arms and two legs. Additionally, the robot's head is composed of a screen that displays two eyes and a mouth, making the robot appear approximately human by presenting basic facial expressions. Designed to be a robotic travel companion, Hitchbot is able to talk about simple facts and carry on limited conversations—some face to face and some via social media. It is equipped with speech recognition software, a GPS device to track its location, and a camera taking pictures periodically to document its travels and to communicate via social media platforms.

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22 Donna J. Haraway, "A Cyborg Manifesto" [1985], *In Readings of the Philosophy of Technology*, ed. David M. Kaplan (Lanham, MD: Rowman & Littlefield, 2004), 163.

23 Bendel, "Robot Selfies, and the Road to Self-recognition".

Fig. 9: Hitchhiking Robot Hitchbot (Twitter 2015)

Hitchbot was designed as part of an experimental project. Its main goal, according to the scientists involved, is to gain knowledge about human-robot interaction in addition to digital communication and to ignite a debate about the relationship between man and machine, society and technology. However, returning to our considerations of experimental systems in the first part of this chapter, Hitchbot's contribution to the experiment's disposition may result in a finding that exists independently of the scientists' intentions. Perhaps robots already communicate in ways we can no longer observe or interpret. Regarding Hitchbot, at least, it didn't take very long until the robot realized that the most promising form of facial expression for a selfie to share via social media is a smile. Possibly the machine also learned that these selfies are a proof of its existence: I take a selfie, therefore I am.

Although the way Hitchbot acts and appears is quite rudimentary, we could still think of much more sophisticated forms of social robots, such as health care or therapy robots that become increasingly important, or even sex

robots that develop specific sensor abilities. It might be the case that this process has to do a lot with selfies. At least Gigapan, the robot we encountered in the first part of this chapter, seems to express some awareness for this context (see Fig. 10).

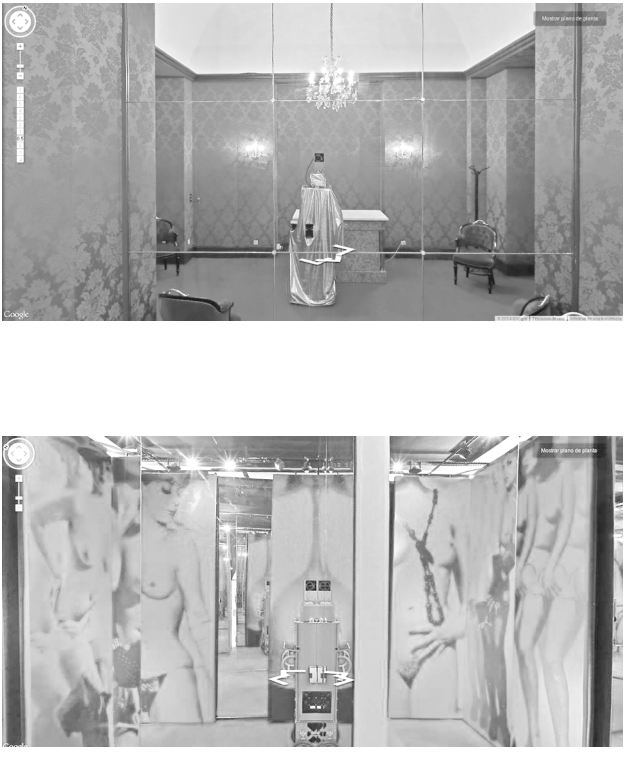

Fig. 10: Gigapan with and without its coat (Google 2014)

The difference between these two images is very telling. Surrounded by bare human bodies, Gigapan got rid of its silvery coat to appear as a naked body amid other naked bodies. Maybe this is nothing but a flaw. However, we could also assume that this instance points to the system's possible optimization, indicating a potential enhancement of robotic self-awareness and self-recognition. Robot selfies exemplify a medial reflection exploring the consequences of a transformation of both visual technology and knowledge formation. This process, we can conclude, involves not only questions of machinic

sensibilities but also, and even more so, an enhanced understanding of the form and function of the selfie as an epistemic technique.

Instagramming
Instagram's Media Practices

1. Anecdote

On January 4, 2019, an unspectacular picture appeared on Instagram. Nothing could be seen other than a brown egg in front of a white background. Only the caption provided any type of directions: "Let's set a world record together and get the most liked post on Instagram. Beating the current world record held by Kylie Jenner (18 million)! We got this". Including the hashtags "#LikeTheEgg #EggSoldiers #EggGang," the post received over 50 million likes by the beginning of February 2019, setting an Instagram world record that it still holds today[1].

When an egg becomes world record-setting, it shows how clearly the use of Instagram differs from other photographic practices. It is not the content of the image that informs us about its extraordinary quality but its being embedded into a logic of outdoing that is inherent in the platform's structure of use. Eugene, the nickname given to the egg shortly thereafter, does not look any different than other eggs. It does not show anything special; it does not share any exciting experiences. It also does not turn to its fellow eggs to show off its attractive shell. What Eugene offers, however, is a call to a competition for likes that has become detached from the aesthetics of the image, from its orientation and expressiveness. In this way, the egg seems to both subvert and confirm the media practice of Instagram. On the one hand, the randomness of the image diverges from the function of a photo service

1 Dan Thorne: „Egg photo breaks Kylie Jenner's record for most liked image on Instagram". In: *Guiness World Records*, online https://www.guinnessworldrecords.com/news/2019/1/egg-photo-breaks-kylie-jenners-record-for-most-liked-image-on-instagram-554801.

that supports and drives the optimization of visual self-presentation. On the other hand, Eugene also engages in a type of influencing that makes use of precisely those competitive mechanisms that constitute the platform's logic of media use. The fact that an egg was able to rise to Instagram stardom is largely due to the fact that it had nothing to communicate beyond its presence of Instagram.

2. Etymology

Instagram is the name of a photo-sharing app developed by Kevin Systrom and Mike Krieger and released in October 2010. It evolved from its predecessor application Burbn, a mobile check-in app which the founders named after their favorite drink. In the course of a readjustment that expanded Burbn's functions to include photo sharing, its developers decided on a new name: "We renamed because we felt it better captured what you were doing—an instant telegram of sorts. […] It also sounded camera-y."[2]

The neologism "Instagram" is made up of "instant" and "telegram," its "camera-y" ring deriving from an abbreviation of "instant camera." Both elements of this portmanteau refer to a media use that is characterized by speed, compression and compactness. "Telegram" and "instant camera" are, in turn, portmanteaus that described new media from the moment they were coined. The *Oxford English Dictionary* traces the term "telegram," made up of the Greek *tele* (far away) and *grámma* (writing), to being in use since 1852.[3] As a term for a message transmitted through cables, the word refers to a media technology that enables the rapid transmission of short communications; with its adoption into everyday usage, the expression also describes an elliptical, clipped style of writing ("telegram style"). Following "telegram," other neologisms came about in the nineteenth century, among which one can already discern a link to instant photography: "Later formations suggested by this word are the hybrids *cablegram* for 'cable telegram,' *pistolgram* for an instan-

2 Somini Sengupta, Nicole Perlroth, and Jenna Wortham, "Behind Instagram's Success, Networking the Old Way," *The New York Times*, April 14, 2021.

3 *Oxford English Dictionary*, 3rd ed. (Oxford: Oxford University Press, 2016), s.v. "telegram."

taneous photograph."[4] The term "instant camera" emerged in the 1940s[5] and describes a camera that chemically develops a print immediately after shooting and ejects it as a finished product. The advantages of taking photos with analog instant cameras, such as the handiness of the devices, the independence from photo laboratories and developing times, and the quick availability of the images, have been largely adopted or replaced by digital smartphone photography. An obvious reference to the analog instant camera can be seen in the Instagram app through the use of an instant camera logo[6] as well as the adoption of a characteristic square image format reminiscent of the cropping of Polaroid photos.[7] Like the term "telegram," the neologism "Instagram" has been adapted to create several further portmanteaus. Both the prefix "insta" (e.g. "instafood," "instamood") and the suffix "gram" (e.g. "foodstagram," "travelgram") are now in use.[8] This trend toward neologisms has been reinforced and driven by hashtags used to tag uploaded images.

The Instagram platform makes it possible to upload, edit, and share digital photos and, since 2013, videos. The term "instagramming" stands for the use of this platform. The *Macmillan Dictionary* provides the following definition for the verb "to instagram": "to take a photo and post it on the social network Instagram."[9] *Wiktionary* notes a further definition: "1. To post an image to Instagram. 2. To digitally manipulate a photograph using filter effects."[10] This addresses the app's central feature, namely the ability to edit a photo with preset graphics filters. Using the photo platform Instagram is therefore not just about publishing, but also and above all about modifying images.

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4 Ibid., s.v. "-gram."

5 Cf. Christopher Cumo, "Polaroid Camera," in *Historical Dictionary of the 1940s*, ed. James Gilbert Ryan and Leonard C. Schlup (London: Routledge, 2015), 305–306.

6 While the first logo used in 2010 even more explicitly hearkened back to an old Polaroid camera, depicting the entire camera, this design was changed in the following years. Since 2016, the app's logo is made up of a minimalistic symbol, only showing a lens and a viewfinder but not the earlier, more clearly defined instant camera.

7 In 2015, the limitation to one format was replaced by several additional formatting options. Now, one can also post photos in a "landscape" or "portrait" orientation. Instagram's typical square image format nevertheless remains the default format setting in the app.

8 See Ágnes Veszelszki, *Digilect: The Impact of Infocommunication Technology on Language* (Berlin: De Gruyter, 2017), 45.

9 *Macmillan Dictionary*, 2nd ed. (London: Macmillan Education, 2009), s.v. "instagram."

10 *Wiktionary, The Free Dictionary*, s.v. "Instagram."

3. Contexts

The use of Instagram has been characterized from the beginning by the use of filters that the app's software offers as default settings. In the early days of Instagram, retro filters, which made posted images look like photos from analog instant cameras, were especially popular. These filtering practices digitally simulate aesthetic characteristics such as a lower contrast, faded colors, and grainy outlines; in other words, features that call to mind candid snapshots and unelaborate production conditions, such as are typical of Polaroid photos.[11] While Instagram images processed in this way may invoke the visual appeal of Polaroids, they also stand in marked contrast to the practices of analog instant photography. Polaroid photos are primarily distinguished from other photographic images by their materiality and haptics; one cannot, for instance, easily paste them into photo albums due to their characteristic weight and thickness. Additionally, analog instant cameras only ever produce a single print, that is, each photo is always one of a kind. Whereas Polaroid photos are distinguished by their irreproducibility and limited manipulability, Instagram images are the exact opposite: they are always open to being edited, shared, and duplicated. Thus, when aesthetic surface effects from older image technologies are imitated by "instagramming," the differences between old and new media use become all the more overt:

> What is colliding here is, on the one hand, an aesthetic reminiscent of the contingency of analog photochemical apparatuses, one which is supposed to rescue smartphone photos from a digital flood of images through a process of alienation in order to give them a supposedly lost aura of uniqueness and, on the other hand, the process of injecting captured photos into the stream of that same flood of images and incorporating them into the logic of a digital media economy.[12]

In the context of how Instagram is used, the "instant," in the sense of a rapid photographic process, has shifted from the analog shutter release to digital

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11 On aesthetic practices in instant photography, see Dennis Improda, "Do (not) press. Sofortbildfotografie in Alltag, Kunst und Wissenschaft. Grenzverläufe ästhetischer Praktiken," in *Ästhetische Praxis*, ed. Michael Kauppert and Heidrun Eberl, 199–234 (Wiesbaden: Springer, 2016).

12 Dominik Schrey, *Analoge Nostalgie in der digitalen Medienkultur* (Berlin: Kulturverlag Kadmos, 2017), 263.

editing. The point is no longer that the picture is immediately available but that it can be immediately altered. In this sense, Instagram's default filters form the basic medium-specific premise of "instagramming". "Instagramming" does not presume that an image is beautiful but that it can always be made more beautiful.

This tendency toward optimization inscribed into the app fundamentally applies to the ability to portray each object that can be photographed but especially to the self-presentation of the users, which is regulated by filtering practices. In this sense, the communication made possible by Instagram is also notably different from older forms of exchange and self-depiction via photographic images: "Back then, a form of communication occurred when you would take out your photo album to show to your circle of friends. Now, however, communication (in terms of its media) is permanently present as a dually contingent construction and re-construction of a trans-Fordist practice aimed at the marketing of oneself with the use of any and all aesthetic means."[13]

Each type of "instagramming" is embedded in an image frame that subjects photos to a rating system immanent in the platform. Both the number of likes and the communication made possible via the comment function provide information about the medial usability of the images. The platform environment forces the comparison with other users, whose success indices align the image messages in a competitive manner. Alise Tifentale and Lev Manovich characterize this dynamic of its usage as "competitive photography" and define their orientation as follows: "The main feature of competitive photography is likability."[14] The term "likability" is understood to mean the connectivity for feedback mechanisms by means of which use-specific approval ratings become visible and measurable. The neologisms "instagrammable" and "instagrammability" are based on this expression. While one of the main Anglo-American dictionaries, the *Merriam-Webster*, has already included the adjective *instagrammable*,[15] it has not yet accepted the noun *instagrammability*.

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13 Wolfgang Hagen, Wolfgang, "'Being there!'. Epistemologische Skizzen zur Smartphone-Fotografie," in *Bildwerte. Visualität in der digitalen Medienkultur*, ed. Gundolf Freyermuth and Lisa Gotto (Bielefeld: transcript, 2013), 126.

14 Alise Tifentale and Lev Manovich, "Competitive Photography and the Presentation of the Self," in *Exploring the Selfie. Historical, Theoretical, and Analytical Approaches to Digital Self-Photography*, ed. Julia Ecckel, Jens Ruchatz, and Sabine Wirth (London: Palgrave Macmillan, 2018), 173.

15 *Merriam-Webster* (Springfield, MA: Merriam-Webster, Inc., 2021), s.v. "Instagrammable."

In common English usage, the term is primarily used in an economic context.[16]

As a designation for the market value of a product or service, the term *instagrammability* refers to the image's characteristics to be relevant for use on Instagram, that is, its compatibility with the platform's inherent economic principles of evaluation. This refers to a logic of the commodity that is inscribed into the app, which establishes the value of an image in terms of its chances at economic success. Not least through the business of *sponsored posts*, "Instagram represents a marketplace for commodities that, with the help of images—especially in the form of image-based narratives, autobiographical in tone, as well as fictional worlds of so-called 'influencers'—are advertised and are therefore also considered an 'image economy.' In keeping with the iconic primacy of communication, images on Instagram, in a sense, function as currency."[17] It is therefore not surprising that references to the use of Instagram are often found in marketing guides whose recommendations relate to business-optimizing 'best practice' models.[18] The "best practices" of "instagramming" are, therefore, processes that use the offer of a platform in the sense of a corporate culture oriented toward growth, implementing it as a type of augmentation of attention that becomes quantifiable through likes and the number of followers. In this context, then, the photographic act of "instagramming" is related to a media marketplace that manages the allocation of images as economic resources.

4. Fluctuations

On January 18, 2019, another image of Eugene, the world-record-setting egg, appeared on Instagram. This time, a small crack, hardly visible, could be seen at the top left. Every few days, further images followed which showed more and more cracks on the egg's shell. On February 3, 2019, a video that shows

16 See for example an article in *The Independent* on the marketing function of Instagram for the tourism industry: Rachel Hosie, "'Instagrammability': Most Important Factor for Millennials on Choosing Holiday Destination," *The Independent*, March 24, 2017.

17 Katja Gunkel, *Der Instagram-Effekt. Wie ikonische Kommunikation in den Social Media unsere visuelle Kultur prägt* (Bielefeld: transcript, 2018), 33–34.

18 See for example Andrew Hutchinson, "New Study Looks at Latest Instagram Best Practices, Including Hashtag Use and Caption Length," *Social Media Today*, November 28, 2018.

Eugene breaking appeared on the online portal Hulu. The animated clip included the following text overly: "Hi, I'm the World Record Egg (you may have heard of me). Recently, I've started to crack, the pressure of social media is getting to me. If you're struggling too, talk to someone." The clip ended with a link to the website talkingegg.info, which contained links to various nonprofit organizations that provide counseling for psychological issues. One day later, on February 4, 2019, the video was also published on Eugene's Instagram account, where it received over 30 million likes within a few weeks.

Eugene's story shows how quickly the connotations of the term "instagramming" can change. Thus, it is noteworthy that in recent years, there has been a growing number of discourse contributions that have expanded the semantic field of "instagramming" to its classification as an addiction.[19] In this usage, "instagramming" implies that the use of the platform can quickly lead to dependency. Here, the linguistic element "instant" moves toward a negative connotation, since it does not refer to the speed of media technology but to how briefly it gratifies a user's needs. Meanwhile, a further neologism has developed from the debate on the addictive aspects of Instagram use in the *Urban Dictionary*: *instaddiction*.[20]

In the past few years, a new twist in the discourse on Instagram's filters has emerged, concentrating on how their ideals of beauty are based on lightness. When African-American singer Dawn Richard uploaded a series of selfies to Instagram in March 2013, it prompted outraged reactions from her fans, who suspected she had bleached her skin using chemical lighteners. When asked by an Instagram user if she had undergone skin bleaching, Richard replied in the comments section: "dawnrichard@deanellw: no babe just pressed the filter button like every other human that has Instagram."[21] The African-American author Morgan Jenkins then made reference to this incident in a blog post entitled "The Quiet Racism of Instagram" and pointed out how inevitable the lightening of one's skin tone is within the software logic of Instagram's filters: "As a woman of color, I wish I could find a filter that

19 See for example German-language discourses such as Britta Schultejans, "Süchtig nach Herzchen, oder: Wie Instagram Abhängigkeit schafft," *Heise Online*, February 6, 2020 and English discourses such as in Amanda Macmillan, "Why Instagram is the Worst Social Media for Mental Health," *Time*, May 25, 2017.

20 *Urban Dictionary*, s.v. "instaddiction," https://www.urbandictionary.com/define.php?term=instaddiction.

21 See Brande Victorian, "When Instagram Filter Goes Wrong: Dawn Richard Is That You?" *MadameNoire*, March 20, 2013.

doesn't light up my skin. […] Instagram users can choose from over 20 filters, but as subjects, we don't have a choice in how our images are processed once a filter is in place."[22]

Jenkins' observation points us to a media precondition of "instagramming" that is crucial for the platform's processes of standardization and normalization. As a social network, Instagram organizes how images are produced, distributed, and received. This includes the fact that in the saving and sharing of an image, the app applies a set of protocols that aim to conform to predefined settings. Consequently, the filtering of images on Instagram is subject to significant limitations: The software's filter settings are beyond the control of consumers, so users can only follow but not modify the application's allocations. The question of whether and to what degree Instagram's preset filtering processes and algorithms perpetuate racist image practices is part of a current discussion both within media studies[23] and within the company itself.[24]

5. Counter-Concepts

A counter-movement against the instantaneousness of "instagramming" has developed in so-called "slow photography." This entails a medium practice that has grown as a reaction to the rapid spread of digital smartphone photography and attempts to counter the quick availability and randomness of millions of posted smartphone images with a slowing down of photographic processes. Tim Wu defines the orientation and goal of "slow photography" as follows:

> The real victim of fast photography is not the quality of the photos themselves. […] We lose something else: the *experimental* side, the joy of photography as an activity. And trying to fight this loss, to treat photography as an

22 Morgan Jenkins, "The Quiet Racism of Instagram," *Racked*, July 7, 2015.

23 See Ulrike Bergermann, "Instagram Racism? Ulrike Bergermann über die neue alte Shirley Card," *ZfM Gender Blog*, October 1, 2015, as well as in "Shirley and Frida. Filters, Racism, and Artificial Intelligence," in *Filters and Frames. Developing Meaning in Photography and Beyond*, ed. Katja Böhlau, Katja and Elisabeth Pichler, 47–63 (Weimar: Jonas, 2019).

24 See Adam Smith, "Instagram Boss Says It Will Change Algorithm To Stop Mistreatment of Black Users, Alongside Other Updates," *The Independent*, June 16, 2020.

> experience, not as a means to an end, is the very definition of slow photography. Defined more carefully, slow photography is the effort to flip the usual relationship between process and results.[25]

If "instagramming" represents a platform-specific type of usage, in which making images focuses on compatibility with rating systems, as well as with follower amounts and like functions, "slow photography" attempts to free the experiential value of photography from this purpose-bound nature. This requires a shift in perspective from product to process. If one shifts the focus from the photograph to the photo processing itself, other forms of medium use come to the fore. The focus is then no longer on the result, but on the process of its creation, no longer on what is finished, but on what is to be finished. In this sense, "slow photography" stresses counter-designations such as the "open-ended" and the "experimental." This retreat behind Instagram's highly expedited processes of image editing is associated with a slowing down that also includes moments of interference. Stressing the unpredictability of the image means taking into account the accidental and unexpected, in other words, allowing for those uncertainties that a platform structure built on efficiency tries to exclude at all costs.

6. Perspectives

Since its inception, Instagram has greatly diverged from its developers' initial idea of creating a purely online photo service. In recent years, the functions of the platform have been increasingly expanded so that the media practices of Instagram have also become more flexible and differentiated: "Like other social networks, Instagram is a dynamic system whose hosts are driven by the demand for increasing the number of users and thus also by competition with other services, and that must therefore accommodate the uses and needs of its users and anticipate new uses and needs."[26] Two trends come to the fore here: the increasing amalgamation of images and graphic elements on the one hand and the divergence from a previous concentration on static photography in favor of an increasing implementation of moving images on the other hand.

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25 Tim Wu, "The Slow Photography Movement. What is the Point of Taking Pictures?" *Slate*, January 18, 2011.

26 Winfried Gerling, Susanne Holschbach, and Petra Löffler, *Bilder verteilen. Fotografische Praktiken in der digitalen Kultur* (Bielefeld: transcript, 2018), 51.

With regard to the first trend, it is notable that graphic forms and symbols such as emojis, hearts, or stars on Instagram increasingly appear in the images themselves. Whereas a posted photo had previously been clearly separate from the like-bar and the comments column underneath it, now, an interpenetration of image and text, photo and graphic, can be seen. This combination of once disparate elements is driven by the expansion of features with which one can add numerous effects to an image. This includes, for example, inserting smileys and text elements but also embedding stickers and GIFs. The former limitation of photo-specific filters, which enabled the editing of an image within parameters such as color temperature, brightness, or sharpness settings, is now being supplemented by overlay features that enrich the image with additional information. One can thus assume that this developing trend will increasingly transform the way in which we communicate in and with images: "We can already predict that graphic and photographic aesthetics will continue to mix, primarily with the goal of even more clearly infusing images with a specific emotional quality, elevating them to easily comprehensible symbols or making them so pointed that they even begin to approximate the pithiness of a verbal statement."[27] Correspondingly, the applications of Instagram could be characterized in the future by a reorganization of image forms, which are shifting away from the ambiguity of photography and toward the unambiguity of an intentionally constructed image message.

The second developing trend in "instagramming" applies to the increasing integration of moving-image elements, that is, the expansion of the platform with the addition of features that are no longer made up of static, but kinetic, image forms. In the process, the mobilization of the image[28] is expanded on multiple levels: it applies both to the movement within the image (for example, in the "boomerang effect," which enables the loop-like repetitive fast-forwarding and rewinding of a recording) as well as to the movement between images (for example in the "story" function, with which one can arrange photos or videos into a short series of images). Other moving-image types of "instagramming" include the video portal *Instagram TV* (abbreviated *IGTV*) introduced in 2018, which allows users to upload longer videos, as well

27 Wolfgang Ullrich, "Instant-Glück mit Instagram," *Neue Zürcher Zeitung*, June 10, 2013.

28 On this type of image mobility, see Lisa Gotto, "Beweglich werden. Wie das Smartphone die Bilder zum Laufen bringt," in *Smartphone-Ästhetik. Zur Philosophie und Gestaltung mobiler Medien*, ed. Oliver Ruf, 225–242 (Bielefeld: transcript, 2018).

as the short video function *Reels*, released in 2020, with which users can create 15-second remix clips.[29] The very terms *Story*, *TV*, and *Reels* show how broad the semantic field of "instagramming" has become: It is now no longer exclusively practices of photography that are invoked, but increasingly also modes of production and reception that originate in the field of audiovisual moving image media. Even if the principles of compactness and shortness can still be discerned in the moving forms of "instagramming,"[30] a tendency toward stretching out and expanding them emerges that could be tied to a reinforcement of the serialization and narrativization of "instagramming".

7. Research

Studies on Instagram's media practices have identified a profound transformation that has both affected the photographic image and is driven by the photographic image itself: "The digital turn, and with it, increased use of location-aware technologies, has yielded innovative image applications and posed new questions about the status and value of the image. These applications rely on algorithmically defined relations between the viewing subject and the world viewed, offering robust alternatives to the visual economies of the past."[31] Crucial to this is the fact that the use of Instagram is no longer oriented toward an individual, inalterable image but is bound up in the practices and potentials of mobile media engagement.[32] This includes algorithmically operationalized processes of designing, sharing, and communicating that permanently change the medial constitution and the understanding of

29 Instagram*Stories* and *Reels* are both takes on features that other social networks had previously developed: the *Story* feature is derived from Snapchat, and the *Reels* feature is strongly reminiscent of TikTok.

30 The maximum length for video content in an Instagram feed is 60 seconds, whereas *Instagram TV* allows for a length of 10 minutes.

31 William Uricchio, "The Algorithmic Turn: Photosynth, Augmented Reality and the Changing Implications of the Image," *Visual Studies* 26, no. 1 (2011): 25. On the implications of the "algorithmic turn," see further Eivind Røssaak, "Algorithmic Culture: Beyond the Photo/Film Divide," in *Between Stillness and Motion: Film, Photography, Algorithms*, ed. Eivind Røssaak, 187–203 (Amsterdam: Amsterdam University Press, 2011).

32 Cf. Lev Manovich, "The Mobile Generation and Instagram Photography," in *Between the Public and the Private in Mobile Communication*, ed. Ana Serrano Tellería, 262–278 (New York: Routledge, 2017).

the image. Here, some theoretical approaches assume a newly developing visual aesthetics, which, above all, is regulated and controlled by Instagram's filtering processes,[33] while others read the changing status of the image as a "crisis of representation,"[34] and still others stress the changing social dynamics that are accelerated by Instagram's visual forms of communication.[35] What they have in common is that they conceive of the practices of "instagramming" as an influential part of media usage that is increasingly informing current image cultures. Studies on Instagram in media theory and media aesthetics, therefore, argue for a change in perspective that detaches itself from the fixedness of the photographic object and instead focuses on the modifiability and transformability of the image and its additional operations.

33 Cf. Søren Vigild Poulsen, "Filtered Aesthetics: A Study of Instagram's Photo Filters from the Perspective of Semiotic Technology," in *Multimodality and Aesthetics*, ed. Elise Seip Tønnessen and Frida Forsgren, 258–273 (New York: Routledge, 2018).

34 Cf. Daniel Rubinstein and Katrina Sluis, "The Digital Image in Photographic Culture: Algorithmic Photography and the Crisis of Representation," in *The Photographic Image in Digital Culture*, ed. Martin Lister, 22–40 (New York: Routledge, 2013).

35 Cf. Elisa Serafinelli, *Digital Life on Instagram. New Social Communication of Photography* (Bingley: Emerald, 2018).

Right here, Right now
Evolution, Animation, and Music Video

How does one actually narrate the history of the media? And what role do the media of history play in this? These questions have recently warranted increased attention. In the course of the debate on the relationship between media and historicity, various models and concepts arise, two of which I will introduce and consider here: evolution and animation.

The term "evolution" has been repeatedly introduced into the discussion on conceptual approaches to media historiography. The media-theoretical adoption of a term whose dissemination can be traced to the description and explanation of a biological system may be surprising at first; its usage, however, can be understood primarily as a possibility of differentiation. This is because the concept of evolution comes into focus precisely where it concerns the demarcation of ideas about revolution. While the concept of evolution connotes a gradual, step-by-step development, the term revolution refers to a radical change that does not continue to build on what already exists but rather departs from it completely or to a large extent and replaces it with something new. Lorenz Engell points out an important premise of evolutionary models in media theory: "Whenever one speaks of evolution, one presupposes that there is some sort of transformation."[1] What is crucial here, according to Engell, is the fact that this transformation is a singular change that neither reoccurs in the same form nor is without consequences. One should further note that, in contrast to the revolutionary moment, this transformation preserves and retains what has been changed: it is not given up or even resolved but perpetuated as something transformed. Engell goes on to establish the conditions under which these forms of transformation

1 Lorenz Engell, "Die genetische Funktion des Historischen in der Geschichte der Bildmedien," in *Archiv für Mediengeschichte* 1 (2001): 34.

can be understood as evolution: "A mere transformation, with all of its forms of crystallization and description, becomes solidified into evolution when a chain of transformative steps, a sequence, is formed."[2] Here, one must consider the overriding, overarching structure of evolution: "Unlike with a transformation, the point-by-point comparison of before and after no longer suffices to establish and formulate a line of development."[3] Rather, it depends on an understanding of the evolutionary process as overall complex from which specific stadia cannot be detached or considered as isolated parts. The epistemological potential of the evolutionary figure must be understood in a similar way, one oriented more toward the structure and dynamics of the developmental process as a whole rather than toward the before-and-after of the individual.

In conjunction with this understanding of media evolution, the second concept, that of animation, comes to the fore. This term relates less to a generic conceptual figure but, rather, points to a specific field, namely that of digital image processing. Almuth Hoberg proposes the following definition: "Computer animation creates artificial image worlds from computational data, whereby the simulation of physicality […] is achieved in addition to spatial and perspective representation."[4] What is noticeable about this (as in other) definitions is the formulation of a decidedly artificial type of production, a recourse to the possibility of animation "to synthesize bodies."[5] This approach can certainly be characterized as a widespread one but not as the only possible one. Because, as Paul Wells explains: "Animation as an art, an approach, an aesthetic and an application informs many aspects of visual culture […]. Like all art forms, it has a history, but in its particular case there are many histories which are still being researched and reclaimed."[6] One of these histories leads back to a pre-form of animation that, exactly like the concept of evolution, relates to a biological model of explanation. It involves the model of grid deformation developed by D'Arcy Wentworth Thompson that I would like to present as the background for the rasterization of the digital image.

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2 Ibid., 36.

3 Ibid.

4 Almuth Hoberg, "Digitalisierung und Postmoderne im Mainstream-Kino. Computereffekte verändern das klassische Erzählkino," in *Oberflächenrausch. Postmoderne und Postklassik im Kino der 90er Jahre*, ed. Jens Eder (Münster: LIT, 2002), 196.

5 Ibid.

6 Paul Wells, *Animation: Genre and Authorship* (London: Wallflower, 2002), 1.

D'Arcy Wentworth Thompson's *On Growth and Form*, published for the first time in 1917, belongs to the field of biological morphogenesis; it explains the relatedness of species by changes in their form. What is remarkable is the text's orientation toward mathematical procedures, such as geometry: for example, Thompson lays an animal skull on a grid in order to explain a species' development by the change in angles and spacings within a system of coordinates. Thompson's approach is still influential more than 100 years after its first publication. This is indicated not only by a German reprint of his work in 2006[7] but also by a comparison of the Thompsonian network of coordinates with grid arrangements used in digital image processing. Therefore, it is not surprising that the School of Mathematics and Statistics at the University of St. Andrews in Scotland uses Thompson's depiction of the transformation of *Argyropelecus olfersii* in the *Sternoptyx diaphana*[8] as its model for a computer animation[9]: in fact, Thompson's grid images look like templates for the animation technology of *morphing*. In terms of the aforementioned media theory of evolution, digital animation can be understood as a mode that does not simply appear suddenly and abruptly but is a part of an overarching developmental trajectory. This development encompasses biological-mathematical notions of form construction (such as that of Thompson), instrument-based technologies (such as the emergence of calculators and computers), but also, further, discourses on the relation of animate/inanimate and on the relation of analog/digital. Here, particular attention must be paid to the reciprocal relationship between development and media; this therefore refers to a development that, on the one hand, is completed through media and which can only be grasped through the media of its representation and, on the other hand, sets in motion the consequences for those same media and, thereby, allows media infrastructures to emerge.

This close connection between evolutionary processes and media development becomes especially evident where its execution is manifested within media practices. The music video for Fatboy Slim's "Right Here, Right Now" (Hammer & Tongs, 1999) will serve as an example of this connection. In the

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7 D'Arcy Wentworth Thompson, *Über Wachstum und Form* (Frankfurt am Main: Eichborn, 2006).

8 This has to do with two fish species whose relation is shown by a thrust model at a 70° angle.

9 "Using a computer to visualise change in biological organisms," *MacTutor*, University of St Andrews. https://mathshistory.st-andrews.ac.uk/Darcy/darcy/.

music video, one sees the development of all life on Earth—presented as a rapid history of evolution in 3 minutes and 30 seconds. The opening contains a text display giving the setting as "350 Billion Years Ago" shown before a dark, apparently unlimited space. This is followed by a trip through the atmosphere, complete with flashes of lightning, through which the viewer is then submerged in a dark blue liquid. Here, one can see protozoa from whose contours various marine animals grow. Subsequently, the marine animal jumps onto land and becomes a reptile; shortly after this, the reptile leaves the ground and climbs a tree. There, it transforms into an ape, who finally completes the big developmental leap to a human being.

In the process, multiple types of movement come into view. First, it is notable that the developmental movements of different species is supplemented and condensed by numerous formal-stylistic movements: at the very beginning, the camera performs a rotating movement in order to immerse itself in the action as if delving through a vortex; then, it moves from left to right (and briefly also from right to left), from top to bottom (and briefly also, again, from the bottom to the top), it focuses the change taking place through a rapid zoom, then moves back again shortly thereafter in order to expand the field of view and switch from an extreme close-up to an extreme long shot. These camera movements are ultimately augmented by severe whip pans and shaky image stretches. Another continuous, fixed movement can be found in the superimposed time code on the right side of the screen, which keeps time as a type of countdown within the picture. Already here, it is obvious that the video does not represent a monodirectional progression but that it works with movements that are counter-rotating. This is evinced by further examples: first, it seems as if the video presents the typical notion of the passage of time. Chronology is presented, on the first impression, as a flow of time, as the passage of time on a time line, as an unstoppable progression, as a continuous duration. At the same time, the image undermines this conception with various methods of time manipulation: it presents both time-lapses (the highly dynamic swimming motions of the fish) and slow-motion (the ape's slowed down jump) and thereby implies a reflexive commentary. Compressing and expanding here can be understood as methods that negotiate the relation to time specifically, that do not visualize time as a universal basic structure but, rather, as an element that can be shifted and reshaped. Andreas Becker stresses: "With time-lapse and slow-motion methods, the potential for different perspectives is opened up to one's perception. With perspectivization, time is pluralized, it confounds the usual models of classification and radi-

cally expands the spectrum of the perceptible."[10] In the context of media evolution, this, too, is reminiscent of the forerunners of image animation. For, ultimately, the initial attempts at time manipulation through recording technology were employed for the sake of scientific inquiries—more precisely: for the purpose of investigating correlations of zoology, biology, and physiology. Here one could name Eadweard Muybridge's photographic studies of animal locomotion as well as botanist Wilhelm Pfeffer's time-lapse experiments to illustrate the growth of tulips. What connects these practices is their ability to construct concepts and models through media-technical operations—this applies to both the first photographic studies of motion and to digital animation techniques.

These associations are taken up in the music video by presenting again movements that oppose each other. This applies to the seemingly continuous movement from left to right, which seems to make up the basic direction of the action. Even this movement seems familiar. It implies a forward motion and, hence, is linked to the ideas of augmentation and differentiation—after all, we read from left to right, and scanning patterns in television systems proceed much the same way. We are used to inferring meaning by increasing complexity from left to right. The progression of evolutionary events in the music video suggests a similar increase in complexity. Here, too, the transformation from protozoon to human being takes place from left to right—with a few significant deviations. This includes, for example, the aforementioned camera movement from right to left but also the interruption of the movement. What is striking, for example, are various objects standing still in the picture (such as the static figure of the burger vendor who acts like a still image within the moving image) but also the deceleration of the developmental movement. As soon as the evolution has reached the stage of *Homo sapiens*, the time code on the right side of the screen noticeably slows down, and the running of the species itself slowly decelerates its tempo. Whereas the previously shown creatures were moving ahead at a rapid pace, the human being, now a fat, sweaty creature, finally remains standing, sinks exhausted on a bench, and performs yet another change of direction at the end: he turns his face toward the viewer and is now, unlike the other species before him, shown frontally rather than in a profile. In this segment, the references to opposing directions of impact accumulate. Although man is presented as the crown of

10 Andreas Becker, *Perspektiven einer anderen Natur. Zur Geschichte und Theorie der filmischen Zeitraffung und Zeitdehnung* (Bielefeld: transcript, 2004), 21.

creation, as it were, at the end of a continuous developmental process, he appears incredibly inert, and the writing on his T-shirt ("I'm #1—So why try harder") proves to be a deceiving, for man is not first but last—at least the last figure shown in the video.

However, this only seemingly marks an end point; when viewed more closely, the deformation of the body shown in the video is not a consequence of evolution but, rather, its prerequisite. This message is supported not in the least by the music video's aesthetics, which makes use of a technique of fluidly constructing and dissolving forms throughout, namely *morphing*, and which thus allows the evolutionary development of forms to come into its own in the digital medium. What at first appears to be a stable form then becomes unstable again, in the sense that it is depicted as something variable and malleable. In every form there is a further form, whereby morphing conceals the moment of transition and thus visualizes metamorphosis and deformation as a fluid process. However, the digital here seems to be addressed not only in its relation to the spatial conception of the form but also in relation to time. With the digital organization of data, the conception of linearity is broken most clearly:

> In the transformation of analog image information into digital, the individual images are dissolved into abstract data that are no longer organized temporally, but spatially. Succession is dissolved into simultaneity, in the radical sense in which the virtual always 'exists' simultaneously. The function of montage, which already transports mobility and simultaneity, is driven further to a dissolution of the material into a stream of temporally updatable image particles with which virtual image sequences can be generated.[11]

The music video exemplifies this situation precisely by the fact that (contrary to conventional music video aesthetics) it does not feature a single visible cut—in the digital succession of images, there is no longer any question of "montage". In this sense, the title of the song, which the video visually choreographs, can be understood as a description of the nature of the digital, as the simultaneity of "here" and "now."

11 Hoberg, "Digitalisierung und Postmoderne im Mainstream-Kino," 204.

Lorenz Engell has pointed out the fact that, in the digital image, the "blurring of the relationships between images is taken into in the image itself";[12] that is, the fact that the digital realm stands for a processual unfolding of the image:

> A digital image is nothing other than a potential for perpetual transformation. It can no longer be detached from the process of its generation, manipulation, alteration, and so on. Digital images, therefore, unfold their peculiar power, their special characteristic that distinguishes them from all other images, less as images than as processes. Digital or digitized images are processable and can be submitted to processes of manipulation and dissemination.[13]

In the digital sphere, there is no longer a singular, fixed, unchangeable image; rather, there is a collection of data that can be accessed and updated at any time. This is where the self-reflexive potential of the digital image proves to be a salient illustration of the model of media evolution. Instead of linear chronology, evolution represents constant change; instead of a rapid break, it points to a gradual development, interdependencies, and relational structures.

The music video for "Right Here, Right Now" presents a visual form of progression that not only visualizes a satire of creation history but also implies a commentary on its own media evolution by means of reflecting on its digital imagery. For the movement to "right here" and "right now", which the clip attempts to trace, is a medially formed and synthetically generated: it is staged as a sequence of various stations whose transitional moments are concealed and manipulated by technical processes, and which thus does not appear as a linear progression, but rather as an interwoven structure of stages. The artificial image world generated by computer animation seems to reflect its own progress here: on the one hand, its potential to develop its own form and, on the other hand, its requirement that this form be converted into yet another form. In this sense, the digital can also be understood as the image of shapelessness, since, as Lorenz Engell states, "[V]isual data formations always bear the prerequisite and concurrent mark of their could-be-different-

12 Lorenz Engell, "Die Liquidation des Intervalls. Zur Entstehung des digitalen Bildes aus Zwischenraum und Zwischenzeit," in *Ausfahrt nach Babylon. Essais und Vorträge zur Kritik der Medienkultur*, ed. Lorenz Engell (Weimar: VDG, 2000), 197.

13 Ibid., 197–198.

ness."[14] This addresses a form of contingency that affects not only the digital but also the mode of medial change as well as its various representations and narratives—and ultimately also the essence of evolution and animation.

14 Ibid., 205.

Types and Bytes
Ludic Seriality and Digital Typography

Ever since the invention of movable letters and the introduction of the typewriter, technical writing tools have been considered as a means of serialization and standardization, characterized by a linear way of ordering things and thoughts. More importantly, as a cultural technique, they fostered and furthered a sharp distinction between print and image. While the advent of the comic book in the industrial age was already instrumental in blurring the line between textual and visual practices, digital games now restructure this terrain to expand it further through their own specific potential. Where comic panels are used to illustrate linear progressions that proceed chronologically, digital games can also be used to diagram complex systems of relations in ways that allow for multiple points of entry or exit, and multiple directions for exploration. This essay aims to demonstrate that the cultural technique of typing is crucial in this process. It not only allows for serial intervention (as a way of navigation), it can also transform letters into objects deprived of their literary function (as a way of representation). Thus ludic seriality provides us with the means to reflect on the conditions and capacities of digital typography. As a media practice, playing with types not only relies on the logics of digital manipulation and flexibility, it also makes them formally visible.

Type:Rider (Ex Nihilo, 2013), a game that both implements the theme of writing's transformation and, by means of its own specific medial properties, is part of its progression, serves as an example. In the following three sections, I will investigate this game as a critical space for rethinking assumptions around writing techniques as well as the historical frameworks through which they have been consistently addressed and evaluated. The first section focuses on the medial quality of writing and textuality as a formal system, the second discusses the dimension of the image as an iconic extension of the textual format, and the third brings together both lines of thought to de-

bate the operational efficiency of digital games as a way of constituting new forms of ludic literacy.

1. Typography: Writing and Re-Writing

As an adventure and puzzle game, *Type:Rider* discovers the history of typography to be a complex configuration. By moving along the historical lines of letters and lettering, the game not only depicts their inherent techniques and aesthetics, but also renders them as evolutionary processes of mediated communication and information. This is made evident already in the tutorial. As a guide to *Type:Rider*, this introductory level invites the gamer to orientate him- or herself in the gameplay. More importantly, it also serves to demonstrate the game's potential for media reflection. While exploring *Type:Rider*'s gameworld via the tutorial, the gamer moves two dots along a path depicting the origins of writing as a process of becoming media. Introducing text as an abstract medium, the game offers a ludic walk from cave drawings to cuneiform writings, from Egyptian hieroglyphs to Chinese symbolism, and from Greek to Latin alphabets. By doing so, it points to a significant development in the history of media: the process of fixing symbols on different materials ends the immediacy of communication. As a result, the formative progression of writing reveals two medial accomplishments: the abstracting distance from the given and the transport of the perceived into a repeatable, serialized symbolic system. Moreover, as is conveyed by the tutorial, these routes are implemented in the gameplay itself: the more the symbols are refined, the more options of operating and moving open up to the gamer.

This growing complexity is investigated progressively by playing the game, by exploring its level structure, and by experiencing its dynamics. *Type:Rider*'s first level marks the entrance into the Gutenberg era. Mechanization, the decisive moment of this phase, is met by the gamer throughout the level in the form of the revolving printing press, which has to be crossed by the movable dots.

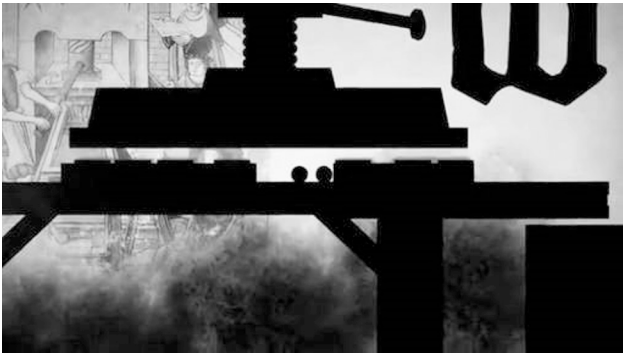

Fig. 11: The Gutenberg Era

Once this scenery is left, a new challenge waits ahead: the dots get caught between the lines of a book organizing their path like bars. Hence the innovation of the printing press as an "agent of change"[1] is made visible: movable type, with its precision of form and its ability to produce and reproduce texts accurately, intensifies the drive toward mechanical repeatability. Further, this kind of conception is deeply affected by the ways in which configurations of technology, media text, and context take shape in specific arrangements and are controlled by particular apparatuses. By moving alongside various textual artifacts, the gamer realizes the extensive reorganization of knowledge's forms as it is made accessible in books and calendars, flyers and posters, newspapers and magazines. Additionally, by passing through the levels, the various dispositifs of knowledge production—such as archives, libraries, or offices—become increasingly visible. Furthermore, technologies that specifically structure and thereby vary typography are presented as movable figures within the game: the printing press, the linotype machine, the mechanical typewriter, and the desktop computer.

However, it is not only the technical means of text production that alters how we perceive it. With the development of industrial forms and means of "graphism," i.e. telegraphy, photography, phonography, and cinematography,

1 Elizabeth Eisenstein, *The Printing Press as an Agent of Change: Communications and Cultural Transformations in Early Modern Europe* (Cambridge: Cambridge University Press, 1979).

writing loses its monopoly on transfer and storage. Surrounded by other media, writing does not remain the same but changes its manifestations: it finds new forms and appearances. This is made visible in a level that leads the dots alongside the development of cinema.

Fig. 12: The Age of Cinema

Here, the dots pass before and jump on neon signs and announcements of features on movie theatre facades. Cinematographic perception corresponds to an important process of stimulation: letters and texts become mobile and movable.[2] As the level demonstrates, these dynamics facilitate aesthetic developments like rolling end titles as well as the typographic design of title sequences and animated lettering.[3] Utilizing a remarkable variety of aesthetic configurations, the cinema introduces and mediates alternate ways of managing information, in terms of both narration and viewing.

In the digital age, text and numbers, sounds and pictures all become software, hence writing as well as typing become seemingly immaterial practices. Thus a new phase in the depiction of writing and lettering, along with their attendant problems and possibilities, is instituted. The written form, coded

2 On the relation of letters and kinesis in the moving image see *Schriftfilme. Schrift als Bild in Bewegung*, ed. Bernd Scheffer, and Christiane Stenzer (Bielefeld: Aisthesis, 2009) and *Kinetographien*, ed. Inke Arns, Mirjam Goller, Susanne Strätling and Georg Witte (Bielefeld: Aisthesis, 2004).

3 The game uses the artist Saul Bass's work as an example, but it also presents the influential lettering design of *Metropolis* (Fritz Lang, 1927).

digitally, is now data which must be made sensually perceivable to be discernable, useable, and applicable as text. Responding to these transformations, *Type:Rider* highlights the introduction of the Graphical User Interface (GUI). In contrast to command-line control, the computer is now operated by graphic symbols: such an interface is not based on lines but on icons. Bit by bit and byte by byte, digital letters begin to emancipate themselves from the final destination of the hard copy. Offering a mise-en-abyme situation of a game within the game, *Type:Rider*'s last level reveals this context.

Fig. 13: The Digital Age

Here, the dots move across a game-like scenery whose bars are reminiscent of *Pong* (Atari, 1972) and whose boxes allude to *Tetris* (Nintendo, 1989), calling upon a screen culture that starts to flourish beyond established routines of lettering. The bars and boxes insinuate the square pixels of the first bitmap fonts whose rough increments are overcome by vector graphics. With the development of desktop publishing, the dependence on type foundries ends. This involves a fundamental shift from standardized to customized font design: each user can now be a designer.

The perception of text and communication about writing does not remain unaffected by the broader availability of the means of textual production. On the contrary, it sets off a cultural-technical change and, as an effect, a medially induced modification of knowledge: "An effect of digitalizing text's design, especially its dematerialization, is, therefore, a change in thinking about

writing"[4]. Accordingly, it is not only the visual alteration of digital text that influences aesthetic shifts and variation, but also the medium's changing effect on our skills in reading and writing. "Media," according to Friedrich Kittler's famous phrase, "determine our situation".[5] The increased accessibility of a variety of fonts leads to an increased contingency of writing and, thereby, to a different mode of reading. Considering the proliferation of textual forms and varieties, their increased mobility and alterability, the reading skills that were suited to (and trained for) the print era are fundamentally challenged. In his text "Lesen lernen" (i.e. "Learning to read"), Niklas Luhmann wonders about the conditions of new reading skills and suggests: "It could be that now, in the face of the computer's new possibilities, we will have to return more and more to our writing skills."[6] This affects not only the basic opportunities for interaction, but also the interdependence of the forms of textual reception and production: in order to learn to read differently, we must know what it means to write differently. This different kind of writing is no longer oriented towards limited spaces and fixed structures of font, as it was in print culture. According to Vilém Flusser, the relation between creativity and processuality is deeply affected:

> Writing on paper means having to limit one's creativity. […] Writing into the electromagnetic field means that the creative text will form lines as well, but these lines will no longer be fixed. They have become "soft," graphic, manipulable. […] Text no longer serves as the result of a creative process, like it did on paper, but is itself this process. It is a processing of information into new information.[7]

The most significant feature of new writing is its ability to mobilize the text.[8] Changes and variations are no longer exceptions but the rule. This becomes

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4 Alexander Zons, „Digitale Typen," in *Handbuch Medien der Literatur*, ed. Natalie Binczek, Till Dembeck, and Jörgen Schäfer (Berlin: Walter de Gruyter 2013), 142; transl. L.G.

5 Friedrich Kittler, *Gramophone, Film, Typewriter* (Stanford: Stanford University Press 1999), XXXIX.

6 Niklas Luhmann „Lesen lernen," in *Schriften zur Kunst und Literatur*, ed. Niklas Luhmann (Frankfurt/Main: Suhrkamp 2008), 13; transl. L.G.

7 Vilém Flusser, „Hinweg vom Papier. Die Zukunft des Schreibens," in *Medienkultur*, ed. Vilém Flusser (Frankfurt/Main: Fischer, 2005), 63; transl. L.G.

8 For an extended discussion of this aspect see Jay David Bolter, *Writing Space. Computers, Hypertext, and the Remediation of Print* (Mahwah: Erlbaum, 2001).

clear in the text's variability and flexibility, the increased possibilities to intervene and influence its appearance, and the results of extending and expanding formerly stable boundaries. Digital text-processing is no longer bound to a firm final condition: What is written can always be re-written.[9]

While analogue printing established the means for fixing the text as a discernible form and thereby standardizing it, digital modes of creation and expression now produce a flexible system of variation and alteration. Addressing the logics and mechanics of the industrial era, Jean Baudrillard points to its defining feature, the series: "The industrial revolution gave rise to a whole new generation of signs and objects. […] This is the phenomenon of the series; in other words, there is the very possibility of two or of n identical objects."[10] The technological rationality of industrial production fuelled serialization processes. It enabled standardization and replication, thereby motivating serial production and perception. In the digital age, these earlier modes of production have conceded dominance to the digital code: "As the order of the counterfeit was seized by serial production (viz., how art succumbed entirely to a kind of 'machinality'), so the order of production is in the process of being undermined by operational simulation".[11] Digital operation allows for infinite alteration. Letters and signs cease to be fixed forms. Instead, they can be created like a drawing, implying the digital text's semiotic significance as an icon. In this way, digital media, and especially digital games, not only make text more agile, but also more iconic. Thus, if the digital game *Type:Rider* plays with mobile typography, it will necessarily have to allude to flexible iconography. As a serial practice, then, ludic seriality is informed not only by changed modes of textual production, but also by visual aesthetics shaping what we see and how we play.

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9 On this development's impact on text in digital games see Nate Garrelts, "The Pencil-Shaped Joystick. A Synoptic History of Text in Digital Games," in *Rhetoric/Composition/Play through Video Games. Reshaping Theory and Practice of Writing*, ed. Richard Colby, Matthew S. S. Johnson, and Rebecca Shultz Colby (Basingstoke: Palgrave Macmillan, 2013), 25–32.

10 Jean Baudrillard, "Symbolic Exchange and Death," In *Jean Baudrillard: Selected Writings*, ed. Mark Poster (Stanford: Stanford University Press, 2001), 140.

11 Ibid., 142.

2. Iconography: Adapting and Converging

Text is more than a medium of language's production of meaning. The game *Type:Rider* reveals this continuously by depicting textual symbols as aesthetic forms in their own right, rather than as functional parts of a coherent text. The characters by which the gamer navigates through the game's world already allude to this fact. The gamer has to guide two dots through a given level from start to finish. But what do these two dots stand for? Do they signify a colon, a division sign, a punctuation mark, a means of calculation? Or do they just represent abstract figures within the game? The dots' abstraction points to the arbitrary and associative usage of symbols and, in this way, give way to a series of possible interpretations.

Just like the dots, the letters' appearance vacillates between textual and iconic elements. This becomes apparent in the way *Type:Rider* renders them as mobile characters: they tilt and twist, and turn upside down. On and on, they keep leaving the line which they are supposed to follow. Thus, on the one hand, the letters appear as agile, separable parts and are thereby removed from their former function in text. On the other hand, the dots always slide upon and beneath them, and in doing so, play with them in a way that does not fix their position but makes it flexible. As a consequence, the letters become elements in an obstacle course: the dots climb their slant walls, roll off of them, jump a serif, and find their way out of a typographical punch. On an on, the letters resist falling into line, as they must do to generate a word and thus meaning.

By pointing to the concept of the "in-between"—those blanks and vacant spaces that are usually not recognized as such in the text structure—*Type:Rider* renders them much more visible than the letters' string of meaning could. Consequently, the game presents writing as a procedure that goes beyond the serialized system of a fixed grammatical arrangement. Addressing systems of signification eluding the confines of alphabetical literacy, Sybille Kraemer and Horst Bredekamp claim:

> The "textualization" of culture has reached its limits. By transgressing those boundaries, the concept of culture assumes new contours. Culture is no longer a matter of monolithic immobility congealed in works, documents or monuments, but liquefies into our everyday practices with objects, symbols, instruments, and machines. The right of exclusivity, which language used to claim for itself (with regard to representing culture), is no longer

> unchallenged. It is in the (inter)play with language, images, writing, and machines—in the reciprocity between the symbolic and the technical, between discourse and the iconic—that cultures emerge and reproduce.[12]

This interrelation of text and icon, this interplay of words and images within everyday fluid practices, becomes even more complex when transferred from the solidity and fixity of typeface to the dynamic mobility of digital gaming. The moving icon's temporality is crucial here. It leads to a perception of visual text not as complete, but as something that has to be completed. While the fixed typeface represents a terminated order, the moving icon's elaboration conveys digital writing as a floating process. Accordingly, there is a shift from text to texting and from product to process.

Still, it would be too simple to reduce the game's imagery to its mobile visual potential. Digital games not only enable the observation of a process but also serve as agents for action. "The meaning of iconography as a constituting characteristic for video games," writes Thomas Hensel, must be considered "as an active, acting mode of operation."[13] This dimension of agency, the possibility to act in and with the digital image, places the video game in an operative and performative context. Games permit the player to regulate what he or she sees, and when. They enable an active mode of controlling serial images to create a sequence:

> In film and television, the point of view was set in motion, but it was the director who controlled the movement. Now, computer animation can function like film in this respect, for it too can present a sequence of predetermined camera shots. However, the sequence can also be placed under the viewer's control, as it is in animated computer games.[14]

Video games mobilize an active viewer, engaging him or her to participate in the process of making visual meaning out of serial pieces. Thus, digital games conform to, but also enlarge and intensify already established modes of serial practices, such as co-operation and re-creation:

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12 Sybille Kraemer and Horst Bredekamp, "Culture, Technology, Cultural Techniques – Moving Beyond Text," *Theory, Culture & Society* 30, no. 6 (2013), 24.

13 Thomas Hensel, „Uncharted. Überlegungen zur Bildlichkeit des Computerspiels," In *Bildwerte. Visualität in der digitalen Medienkultur*, ed. Gundolf S. Freyermuth and Lisa Gotto (Bielefeld: transcript, 2012), 220; transl. L.G.

14 Jay David Bolter and Richard Grusin, *Remediation. Understanding New Media* (Cambridge: MIT Press, 2000), 29.

> It is quite likely that this is the most important outcome of media serial products: 'mediatization' of the audience, establishing co-operation and the interdependency between producer (or 'creator') and audience (or 'recreator'). Series is not a production followed by reception, but a co-operative process of creation and recreation.[15]

With respect to digital games, ludic elements allow for a specific kind of generative creativity. Ludic seriality not only makes the gamer productive and active. More importantly, ludic modes depend on activity as a necessary prerequisite. Hence, action is the determinant factor of the game's mediality. Alexander Galloway emphasizes:

> Without action, games remain only in the pages of an abstract rule book. Without the active participation of players and machines, video games exist only as static computer code. Video games come into being when the machine is powered up and the software is executed; they exist when enacted.[16]

Contrary to the pre-staged and thus finished action of the cinematic image, the player of video games is able to advance the plot by his actions. Moreover, contrary to the viewer's fixed position in the classical cinematic dispositif, the gamer must constantly perform physical movements—from the tiny motor performance of pushing keys and buttons to the broader physical engagement demanded by more complex motion-control mechanisms such as in exergames.[17] All these actions become perceivable through images which themselves are specifically configured in relation to those movements:

> Motoric execution is, according to the software's stipulations, translated into a specific audiovision. As a consequence, motoric execution is not solely perceived as a physical act in the here and now by the agent; it moreover mani-

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15 Tudor Oltean, "Series and Seriality in Media Culture," *European Journal of Communication* 8 no. 5 (1993), 12.

16 Alexander R. Galloway, *Gaming. Essays on Algorithmic Culture* (Minneapolis: University of Minnesota Press, 2006), 2.

17 Ian Bogost defines exergames as "games that combine play and exercise," including digital technology that tracks body movement and physical reaction, see Ian Bogost, "The Rhetoric of Exergaming," 2005, Accessed October 12, 2014, http://bogost.com/downloads/I.%20Boogst%20The%20Rhetoric%20of%20Exergaming.pdf. For a discussion on the relation of exergaming and kinaesthetic mimicry see also Bryan G. Behrenshausen, "Toward a (Kin)Aesthetic of Video Gaming. The Case of Dance Dance Revolution," *Games and Culture* 2, no. 4 (2007), 335–354.

> fests itself […] as a situatively abstract image object or a situatively abstract image perspective.[18]

Digital games demonstrate a significant transformation from types to bytes. While mechanic seriality relied on the factor of exact repeatability, digital seriality brings into play the concept of flexible modulation. Stretching from linear succession to multi-directed expansion, ludic modes of serialization enable the linkage of tactile, controlling movements to a visually mediated image perspective. According to Vilém Flusser, the conversion of knowledge forms and modes of perception is to be considered along the lines of the changes in the linearity of text towards nonlinearly structured codes and manners of communication. His treatise Krise der Linearität (i.e. The Crisis of Linearity) opens with the following hypothesis: "We went from icon to text. It became predominant, reached a crisis, was broken, and now we find ourselves beyond text in a new iconization, which we have to practice first".[19] This new iconization, induced and driven by the digital restructuring of the image, does not simply dismantle linear code as a predominant habit of perceiving and knowing. It also indicates that the aptitude to think might not solely be reorganized, but genuinely formed anew. Flusser argues

> that the transition from one-dimensional to zero-dimensional not only implicates new categories of perception (for example, a calculus of probability instead of causal explanation, or calculation of proportion instead of logic), but new categories and values in general.[20]

Accordingly, one should wonder which new categories begin to arise within the field of digital gaming and how they can be illuminated as non-linear rhetorical and visual strategies. This includes not only the changed constitution of text and image, but, additionally, the transformation of medial constellations as well as their implications for new categories of media historiography. The following section will focus on these phenomena.

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18 Jochen Venus, „Erlebtes Handeln in Computerspielen," *In Theorien des Computerspiels zur Einführung*, ed. GamesCoop (Hamburg: Junis, 2012), 117; transl. L.G.

19 Vilém Flusser, *Krise der Linearität* (Bern: Benteli, 1992), 4–5; transl. L.G.

20 Ibid., 34; transl. L.G.

3. Playability: Activating and Mobilizing

The game worlds addressed by *Type:Rider* transcend the notion of a closed text. This becomes apparent in the game's interactive and transmedia experience, which is available in three different formats: as a video game, a social game, and an interactive installation.[21] Each of these dimensions transports specific medial qualities, interacting in a way that renders one dimension referential to the other. Hence this intermedial conglomerate indicates a progression which no longer emanates from discrete entities, but arises from processes.

The video game *Type:Rider* itself is more than a singular game in the sense of a fixed, closed configuration; it can be installed on both the PC and on mobile platforms such as smartphones or tablets. Accordingly, there are various ways of controlling and gaming to be experienced. On the PC the two dots are controlled by typing on the PC keyboard and observed on a stationary screen; navigation on mobile platforms demands other skills like balancing, tilting, and commanding by touch and gesture. In the first case, the gamer becomes aware of changing modes of type, that is, the performative execution of acting-by-typing. Being converted from instruments of textual production to agents within the world of the game, the PC's alphanumeric keys are deprived of their original purpose. Thus the keyboard's logic is converted from that of a typewriter to that of a *Type:Rider*. On mobile platforms, by contrast, the gamer is sensitized to more artistic movements that bring to mind the virtuosity of a painter's brush or the manner of handwriting rather than typewriting. Offering multiple ways of perceiving and controlling text and content, tablets and smartphones demonstrate a variety of possible practices: they can be used as a game board, a space for inscription, or a screen to draw upon.

The social game version of *Type:Rider* opens up yet another route for the reflexive potential of intermedia processes. Having been specially designed for Facebook, it allows users to create their own levels and share them with others. Within the system, the orientation and difficulty of each level can be determined individually by means of various design and layout components. Beginning with a basic set-up, which defines a starting point and a finish, challenges and obstacles can be added as game design elements. The positioning and direction of letters can be set up, and their size, mobility, and rotation can be changed. Moreover, the creative process of level-design is bound to a specific system of motivation: the user progresses in his or her training and is

21 A presentation of these formats is available at: http://typerider.arte.tv.

certified according to his or her improvements (for example, the user can be promoted from "stonemason" to "copyist"). Finally, these individually created parts of the game can be shared with others who can respond the levels' structure and dynamic. In this way, *Type:Rider*'s level design is more than a creative task: as a social game it accentuates feedback and interaction, and by doing so, it not only facilitates experimental development of gaming environments but also generates a broader understanding of dynamic processes of creation and cooperation.

The third format, the interactive installation of *Type:Rider*, initiates a transfer of the game's rules to exhibition spaces. The installation is arranged as a movable artwork which levitates the points as projected elements in space. Moreover, the game's letters can be changed by the viewers-users themselves and thus be repeatedly rearranged and realigned. Using video projection and shape recognition, this version of *Type:Rider* leaves the screen to be experienced in public spaces. Hence, it reflects our perception of everyday life as being overlaid by ludic modes which exceed the stationary medium and thereby interact with reality. On the one hand, this process promotes a sensitization to text's removal from its material substrate (since the installation addresses the virtualization of both writing tools and texts); on the other hand, it alludes to forms and systems of augmented reality (since it presents a real-world environment supplemented by projected information, thereby enhancing the perception of reality).

As a transmedia project continuously converting and extending its universe, *Type:Rider* focuses on the media development of writing and its historically adaptable positions and procedures. Moreover, it prompts users to rethink the constitution and transfer of knowledge in its dominant forms and systems. *Type:Rider* can thus exemplify a medial reflection exploring the consequences of a transformation of both cultural techniques and media historiography. This ensuing potential for changed and changing understandings of history has been addressed by Kerschbaumer and Winnerling: "Video games dealing with historical content […] are mechanisms of dynamic production of more or less coherent processes of representation of the past."[22] Additionally, however, video games not only deal with representations, but with the very

22 Florian Kerschbaumer and Tobias Winnerling, Postmoderne Visionen des Vor-Modernen: Des 19. Jahrhunderts geisterhaftes Echo," in *Frühe Neuzeit im Videospiel. Geschichtswissenschaftliche Perspektiven*, ed. Florian Kerschbaumer and Tobias Winnerling (Bielefeld: transcript, 2014), 14; transl. L.G.

production and modulation of historic knowledge itself. If the digital game *Type:Rider* deals with the history of writing, it renders it in a specifically ludic manner: it does not simply write this history, but it writes itself into what it generates and transfers as a knowledge of writing. In this respect, it allows for a shift in perspective that focuses on its own mediality and can thus be made productive for the examination of the historicization of media culture. Lev Manovich underlines: "Computerizing culture not only affects the logic of currently produced cultural objects, but rather our understanding of art and media of the past."[23] Consequently, categories that newly arise from digitalization should be applied to concepts of media history. As an example, Manovich mentions the category of the interface and suggests that we develop a "new reading of media history as a history of interface-design," that we "think of the interface, a term originating from engineers' laboratories, as a broad cultural category."[24] Defining the interface as an intersection of man and machine implying technical as well as conceptual demands, Manovich concentrates on Internet culture and the question of its function as facilitator. In this context, the interface is understood as a central cultural category that cannot be reduced to a mechanical hub. It must rather be apprehended as a configuration that implements technological modi operandi as cultural techniques. For Manovich, the web browser serves as an example for a passage through which technical information and artistic production are transferred and transported:

> As a window of a Web browser comes to replace cinema and television screen, a wall in art gallery, a library and a book, all at once, the new situation manifests itself: all culture, past and present, is being filtered through a computer, with its particular human-computer interface.[25]

The concept of the window addresses a far-reaching change, concerning not only the passage of content, but also raising questions about its representation and perception. Jay David Bolter and Richard Grusin's concept of remediation concentrates on processes in which former and current medial logics

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23 Lev Manovich, „Das Interface als Kategorie der Mediengeschichte," In *Archiv für Mediengeschichte 1: Mediale Historiographien*, ed. Lorenz Engell and Joseph Vogl (Weimar: Universitätsverlag Weimar 2001), 161; transl. L.G.

24 Ibid., 162; transl. L.G.

25 Ibid., 163; transl. L.G.

are intertwined. According to this concept, digital culture's central characteristic consists of a tendency to hyper-mediatize:

> Where immediacy suggests a unified visual space, contemporary hypermediacy offers a heterogenous space, in which representation is conceived of not as a window on to the world, but rather as 'windowed' itself—with windows that open to other representations or other media.[26]

Anne Friedberg, whose history of the window as a cultural interface traces a development from multiplication to virtualization, points in a similar direction:

> The window's metaphoric boundary is no longer the singular frame of perspective—as beholders of multiple screen "windows," we now see the world in spatially and temporally fractured frames, through "virtual windows" that rely more on the multiple and simultaneous than on the singular and sequential.[27]

Decisive for the interface as a cultural category, however, is a component that goes beyond the aesthetic tendency of virtualization and fusion: the dimension of intervention and control. Alexander R. Galloway underlines: "Interfaces are not simply objects or boundary points. They are autonomous zones of activity. Interfaces are not things, but rather processes that effect a result of whatever kind."[28]

While in the past, the printing press served as a potent interface with the culture of knowledge regulating access, modes of perception, and forms of thought, digital games now generate new aspects of activity and exchange. A final look at *Type:Rider* shall demonstrate this. Clearly the game's most significant quality is the transition from invariant knowledge forms to flexible knowledge constellations. Intra-ludically, this becomes evident in the gameplay's seriality: the process of acquisition takes place more than once, leaving the basic constellation unchanged, while gaming itself is open for variation

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26 Bolter and Grusin, *Remediation*, 243.

27 Anne Friedberg, *Window Shopping: Cinema and the Postmodern* (Berkeley: University of California, 2000), 243.

28 Alexander R. Galloway, *The Interface Effect* (Cambridge: Polity, 2012), VII. On the cultural history of the interface see also Steven Johnson, *Interface Culture. How New Technology Transforms the Way We Create and Communicate* (New York: Basic Books, 1997) and Branden Hookway, *Interface* (Cambridge: MIT Press, 2014).

and deviation. As a result, gaming does not concentrate on securing static knowledge repeatedly, but rather on exploring that which can be known variably. In so far, we are dealing with an experimental quest: something must be tested repeatedly in order to reach the next level of expertise. This correlates with a specific possibility—that of sharpening the gaze for dismissed opportunities of progression. Moreover, this consciousness is not solely developed inside the game's world, but expands to the phenomenon of "serial interfacing"[29]. That which is being explored and investigated is transferred to other media contexts and is made visible as knowledge of the game. Take, for example, various YouTube videos presenting a productive processing of *Type:Rider*'s facilities. In contrast to walkthrough videos, these clips transcend the game's original scenery to establish an independent form of design. For example, there is a digitally animated film in which self-made lettering moves across screenshots of the game *Type:Rider* and other pictures[30]; or a clip which presents an arrangement of paper-folding techniques while addressing *Type:Rider*'s levels, playing with the relation of literacy and spatiality.[31] By combining user generated content with gaming aesthetics, these clips oscillate between artistic direction and visual gimmick, between abstract short film and medially reflexive comment.

On the one hand, these practices indicate how gamers become agents surpassing the game. On the other hand, crucial to the question of media and its historicization, it becomes evident that we are at the beginning of a transformative process that is able to change not only our present modes and forms of knowledge, but also our understanding of their origins. Ludic seriality enables the acquisition of knowledge as a flexible process. It allows for an experimental epistemology which displays and unfolds knowledge levels and maps the connectedness and entanglements between them. In this respect, digital games can be understood as catalysts for historicizing knowledge formations:

> At this profoundly transitional moment in media development, the working agenda for historians can quite productively make use of those earlier transition moments when related forms of instability threw into question

29 Shane Denson and Andreas Jahn-Sudmann, „Digital Seriality. On the Serial Aesthetics and Practice of Digital Games," *Eludamos. Journal for Computer Game Culture*, 7 no. 1 (2013), 11.

30 https://www.youtube.com/watch?v=qkRuK8Dt_G4.

31 https://www.youtube.com/watch?v=xcSe3Z5KdZA.

media ontologies and, with them, issues of epistemology, perception, and memory.[32]

Thus, digital games are more than archives and systems, more than apparatuses and applications. They are laboratories in which we have to move and prove ourselves.

32 William Uricchio, „Medien des Übergangs und ihre Historisierung," In *Archiv für Mediengeschichte 1: Mediale Historiographien*, ed. Lorenz Engell and Joseph Vogl (Weimar: Universitätsverlag Weimar 2001), 70; transl. L.G.

Touch / Don't Touch
Visuality, Tactility, and Music Video

1. Correlating

In times of global media cultures, distances seem to be disappearing. In the face of borderless flows of data and global migration movements, the conversation has shifted to concepts like *decentering* and *delocalization*—and to the claim that encounters with the Other are now a thing of the past. In his reflections on the constitution of today's cultures, Wolfgang Welsch, for example, recognizes a growing tendency toward networking and intermixing that renders binary attributions untenable. According to Welsch, the interpenetration of cultures ensures rapprochement instead of demarcation. In the face of comprehensive cultural exchange processes, states Welsch, "simply nothing is foreign anymore."[1] Perhaps this is all a bit more complicated—because there *is* something alienating inherent in intercultural encounters and moments of contact. Ambivalences spread wherever the One meets the Other. The dismissal of an awareness of differences, the negation of the foreign, does not provide a convincing approach to the changing conditions of cultural negotiations. Rather, it is necessary to focus on those conditions that set differences and distinctions and that in turn make this process perceptible and observable.

The following considerations focus on the opposition of black and white, or put more precisely: on the encounter of black and white bodies. Special attention will be paid to the visible and touchable surfaces of these bodies, i.e. the skin and the sensory modalities of visuality and tactility associated

1 Wolfgang Welsch, "Transkulturalität. Zur veränderten Verfassung heutiger Kulturen," in *Hybridkultur. Medien, Künste, Netze*, ed. Irmela Schneider and Christian W. Thomsen (Köln: Wienand, 1997), 72.

with it. The field of music videos seems particularly suitable for this purpose. Firstly, it is a core characteristic of pop culture that it is interested in surfaces and is itself a phenomenon of the surface; secondly, music videos can also be regarded as designated surfaces of experimentation for media-technological innovations—such as aesthetic innovations in the digital sphere. Music videos are capable of making their medial formal character visible. They thus not only follow the conditions that constitute them but make them conscious and recognizable. New connections create new relations. They are not only called up by the images, but are themselves virulent within them: "What can be shown is shaped by the techniques of representation; these are not simply added to their content afterwards, enveloping it, but are constitutive to it."[2] Media are not containers but structures of conditions; the nature of the medium itself is not ancillary but fundamental. As examples of this idea, the following will address two music videos that appeared in the 1990s and focus on the encounters of white and black bodies by means of digital staging techniques: "Black or White" (John Landis, 1991) and "Africa Shox" (Chris Cunningham, 1998). Before addressing these two examples, some premises will be clarified.

The contrast between black and white can be considered a paradigmatic opposition in Western culture to this day, one that has caused particularly sharp confrontations and demarcations. Already in 1952, Frantz Fanon had pointed this out in his work *Black Skin, White Masks*. Fanon's influential text will be used here to explore the form of an encounter that reveals diverse modes of contact at the moment of meeting. These modes imply various sensory modalities—whereby they do not exclude but comprehensively include each other, and thus also open up perspectives for media-theoretical questions of perception. In fact, Fanon's remarks can themselves be understood as a zone of transition that addresses the meeting of gaze and touch as a multilayer figuration of mediation.

In *Black Skin, White Masks*, Fanon addresses different forms of interference between the image of the self and the image of the other. In doing so, he is particularly interested in the question of the visual within the field of tension of ethnic difference and psychic identification. In the acts of seeing

2 Ulrike Bergermann, "Tastaturen des Wissens. Haptische Technologien und Taktilität in medialer Reproduktion," in *Intellektuelle Anschauung. Figurationen von Evidenz zwischen Kunst und Wissenschaft*, ed. Sybille Peters and Martin Jörg Schäfer (Bielefeld: transcript, 2015), 319.

described by Fanon, the gaze of the white person not only testifies to the existence of the black body, but at the same time exposes it to the danger of dissolution. The effect of this desubstantialization consists in a transformation of the closed concept of the body, which is superimposed by a visually determined surface politics: "What else could it be for me but an amputation, an excision, a hemorrhage that spattered my whole body with black blood?"[3] What is striking in this statement is the visualization of blood as a distinct determinant of ethnic identity. This is remarkable insofar as biologistic taxonomies long presupposed not the skin but the composition of the blood as the defining criterion of race—beyond evidence based on visibility. Mary Ann Doane notes: "The legal criterion for racial identity in the United States has historically been linked to blood rather than skin. The polarization of white and black ensures that there are no gradations in racial identity—one drop of 'black blood' effectively makes one black. Genealogy, a potentially invisible history, ultimately determines racial identity."[4] Blood as a categorical criterion of racial identity is now shifted in Fanon from the interior to the exterior. The process of seeing functions here as an aggressive-transcendental tool of the oppressor who, by means of a codified gaze based on control, is capable of marking the black person as an object and thus reducing him to a surface-being. This has particular consequences for the perception of the body: "Then, assailed at various points, the corporeal schema crumbled, its place taken by a racial epidermal schema."[5] The principle of a "racial epidermal schema" refers to one of the basic constants of the repressive power of racism. The skin as an immediately visible organ becomes the site of alienation, a cover that, precisely because of its constant visibility, is constituted as a fundamental pattern of imagination of the discourse of domination. Fanon describes the subjection to the dissecting white gaze as an agonizing experience that the oppressed cannot escape: "I am overdetermined from without. I am the slave not of the 'idea' that others have of me but of my own appearance."[6]

Fanon's remarks on the visually conditioned identification of the colonial Other have received new attention in the course of postcolonial studies. Thus,

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3 Frantz Fanon, *Black Skin, White Masks*, trans. Charles Lam Markmann (London: Pluto Press, 1986), 112.

4 Mary Ann Doane, *Femmes Fatales: Film Theory, Psychoanalysis* (London: Routledge, 1991), 229.

5 Fanon, *Black Skins, White Masks*, 112.

6 Ibid., 116.

many authors have subjected Fanon's "racial epidermal schema" to an in-depth examination and discussed skin as a primary sign of racial differentiation. Homi Bhabha, for example, has concisely highlighted this correlation. He assumes that "'skin' in racist discourse is […] a prime signifier of the body and its social and cultural correlates."[7] Its color forms different markers that the skin carries outward as a guaranteed identity: "The difference of the object of discrimination is at once visible and natural—colour as the cultural/political *sign* of inferiority or degeneracy, skin as its natural '*identity*.'"[8]

It is not surprising that, in the context of colonialism, the observation of skin is tied to its visible color. Indeed, the beginnings of a scholarly interest in skin, as it developed in the middle of the seventeenth century, seem to have been taken up here again. The earliest research questions, with which skin first became an epistemic object, initially applied not to its organic nature but to its visuality, as Claudia Benthien demonstrates in a survey of the scientific history and anthropology of skin colors.[9] While at the moment of being viewed skin appears as a type of enclosed covering and presupposes a perception-specific relationship of distance in the visual mode, this spectrum is expanded with the integration of a further component—namely the tactile. Benthien points to the fact that skin "can be experienced in the perception of the Other both through the proximal and the distal senses."[10] Here, touching has traditionally been given far more attention than seeing:

> As a sense organ, skin differs from the visually perceived to the extent that the skin being viewed always possesses the character of an object, while touch, which is also always a being-touched, concerns the suspending or questioning of the Self/Other boundary. From the perspective of cultural history, perception via the skin was marginalized in favor of distanced, optical observation of this skin from the outside.[11]

Possibly this marginalization could be caught up by media developments—at least they could provide the occasion for newly problematizing the function of the tactile. Ulrike Bergermann, for example, asks

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7 Homi K. Bhabha, *The Location of Culture* (New York: Routledge, 1994), 117.

8 Ibid., 114.

9 Claudia Benthien, *Im Leibe wohnen. Literarische Imagologie und historische Anthropologie der Haut* (Berlin: Arno Spitz 1998), 169–178.

10 Ibid., 12.

11 Ibid., 34.

> whether the concepts we apply a priori to perception and ultimately to thinking are characterized by the primacy of the visual to such an extent that they must be reconsidered—whether because the experienceable is changing with new technologies and the selectivity of epistemological concepts would have to be correspondingly adjusted, or in the course of a reassessment of neglected senses that calls for methodological self-reflection.[12]

This is to be investigated—by looking at a situation of media upheaval that ostensibly still carries the visual within itself but which at the same time is already beginning to drive the tactile to the surface.

2. Contouring

When the music video for "Black and White" was released in 1991, it attracted increased attention—not least because it began to circulate new image forms with the use of morphing effects. The video is made up of four parts. It starts with a look at a suburban American family, whose son incurs his father's angry by consuming loud pop music. In the subsequent segment, Michael Jackson can be seen dancing and singing his song "Black or White"—surrounded by alternating dancers who, from their various costumes and settings, appear to be from different parts of the world. This impression of ethnic diversity is taken up again and heightened by a series of faces that emerge from and merge into each other by means of a morphing effect. One sees various skin colors and physiognomies whose alternation seems to occur seamlessly in one fluid movement. The next segment shows another morphing. A black panther morphs into Michael Jackson, whose jerky dance moves are now no longer accompanied by music. Screams and outbursts of violence follow, in the course of which several window panes are broken. Finally, Jackson turns back into the panther and leaves the scene. The last sequence consists of a cartoon sequence that shows Bart Simpson watching TV in the Simpsons' living room. "Black or White" can be heard again, to which Bart, dressed in a black Michael Jackson T-Shirt, dances enthusiastically. Just as at the beginning of the video, a son is provoking his father: Homer Simpson appears, complains about the noise, and turns the television off—which ends the video.

12 Bergermann, "Tastaturen des Wissens", 301.

The statement announced in the lyrics—"It don't matter if you're black or white"—seems to also be stated by the video's images and spread throughout them. "No matter," no solid substance be detected as a ground or basis. Is this about the undermining, the dissolution and erasure of difference? The celebration of a perfectly formed formlessness? This position has been argued several times over in the discussion of morphing, paying particular attention to the idea of the transformative. Ron Alcalay applies it to both the level of production and of reception and explains:

> [Morphing] captivates audiences because it appeals to our belief in the idea of a transformational identity. Morphing combines cinema and computing to create lifelike images which confront the viewer with spectacles of unstable identities, and plays upon assumptions of fixed, bounded, or essential identities. Entrenched differences in race, sex, age, etc., give way to a continuum of identities that creates images of those who may identify with more than a narrow group. Morphing makes these alternative sites of identification visible and hence available.[13]

Making a similar argument, André Nusselder links the fascination of the digital with a new potential for gestalt formation: "So what fascinates us in digital media is their capacity to create new gestalts out of discontinuities and heterogeneities (such as the morphing of different people into one gestalt, as in Michael Jackson's video clip 'Black or White')."[14] In contrast, Vivian Sobchack has pointed out the fact that the notion of the "one gestalt" does not only hold fascination but also discomfort: "In the name of an ill-conceived multiculturalism, the music video collapses both difference and otherness into self-sameness as we watch a range of human faces distinctly marked by their differences and otherness morph one into the other in a reversible chain not of resemblance but of smiling similitude."[15]

This takes up a fear that Jean Baudrillard had already described as a core characteristic of the 'video stage'. In "Video World and Fractal Subject", Bau-

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13 Ron Alcalay, "Morphing Out of Identity Politics: *Black or White* and *Terminator 2*," in *Bad Subjects: Political Education for Everyday Life*, ed. The Bad Subjects Production Team (New York: New York University Press, 1998), 135–136.

14 André Nusselder, *Interface Fantasy: A Lacanian Cyborg Ontology* (Cambridge : MIT Press, 2009), 87.

15 Vivian Sobchack, "At the Still Point of the Turning World: Meta-Morphing and Meta-Stasis," in *Meta-Morphing: Visual Transformation and the Culture of Quick-Change*, ed. Vivian Sobchack (Minneapolis: University of Minnesota Press, 2000), 139.

drillard speaks of the "endless assimilation of man to himself"[16], of a multiplication that threatens to undermine, even destroy, the distinctive: "Therefore, we are dealing with another dimension of difference. It is no longer the difference between one subject and another, but the endless differentiation of one and the same subject. […] We are no longer alienated by the others or from the others, but from our countless possible clones. This means, however, that we are no longer alienated at all."[17] Alignment does not appear here as a moment of liberation but as a type of unsettling assimilation. The undermining of difference seems threatening because it breaks open previously stabilizing distinctions. In fact, it announces a medial stage that is markedly different from others. Whereas film editing once still provided a sense of closure and separation, the image of the digital now seems to lose its limitations. Vivian Sobchack stresses: "The digital morphing of disparate bodies in 'Black or White' […] that unifies these bodies is not merely analogous to cutting them together on an action […]. Thus the morphing sequence develops with neither a significant beginning nor an end."[18]

As a music video, "Black or White" is first and foremost a part of television; more precisely, music television, for which it was produced. In contrast to film, which has a beginning and an end, television is characterized by uninterrupted perpetuity: it runs on and on, it never ends. The images of television do not cohere like those of film: "Consequently, television has developed montage not as a cut or from the cut, but as a transition."[19] With television, images flow into one another; its priority is not clear cuts but transitional blurring. The proliferation of channels and the multiplication of formats are not inconsequential for the aesthetics of the televisual image. The music video "Black or White" could hence be viewed as a reflection on the principle of transition—at least it seems to be able to appropriately mediate what it shows by means of its narrative: "The bodily image of the indeterminate hybrid—much like Jackson's facial surgeries—exists devoid of distinct origins […], while the act of morphing strives for continuity and smoothness, thereby easing us into

16 Jean Baudrillard, "Videowelt und fraktales Subjekt," in *Philosophien der neuen Technologie*, ed. Jean Baudrillard, Hannes Böhringer, Vilém Flusser, Heinz von Foerster, Friedrich Kittler, and Peter Weibel (Berlin: Merve, 1989), 113.

17 Ibid., 113–114.

18 Sobchack, "At the Still Point of the Turning World," 142.

19 Lorenz Engell, "Fernsehen mit Gilles Deleuze," in *Der Film bei Deleuze. Le cinéma selon Deleuze*, ed. Oliver Fahle and Lorenz Engell (Weimar/Paris: Verlag der Bauhaus-Universität/Presses de la Sorbonne nouvelle, 1999), 472.

the idea of indeterminacy, while allowing for a certain kind of narrative logic to unfold before our eyes as we watch one thing become another. Flow is the narrative."[20]

In flow, television comes into its own.[21] Here, it is no longer a matter of clearly distinguishable programs but a continuous flow, a seamless series of elements fading into one another. Within this medial fluidity, skin, as a demarcating surface of the body, seems to be more of a continuum than an enclosed entity: a malleable layer, a flexible membrane. Does it matter what color it is? "It's not about races; just places, faces," the song's lyrics say, and less later: "I'm not gonna spend my life being a color." The endless mutability of the digital seems to point more toward a *de*-differentiation than a differentiation. Is this a matter of making grand utopian gestures? Andrew Blauvelt states: "The mutable nature of digital media, including, and especially, morphing technology, allows us to envision the seemingly impossible (social harmony), visualize the ineffable indeterminate (not-man/not-woman, not-black/not-white), and flirt with the thrill of fantasy or terror (to be the other)."[22] The crossing of borders is not only connected with all-embracing hopes, but also with the greatest fears. What "Black or White" tries to wipe out is brought into focus in "Africa Shox."

3. Colliding

Like the first example, "Black or White," the second music video, "Africa Shox," makes use of digital forms of staging—however, here the focus is not on smooth transitions, but on collisions and breaks. The basic structure of the video can be divided into four sections. At the beginning, the dark-skinned protagonist of the events is introduced—and, with him, the problem of visibility, because, at first, he can hardly be made out. In the darkness of a backyard on New York's Wall Street, a man crouches between garbage cans, only becoming visible the moment he stands up. Furthermore, it is noticeable that

20 Andrew Blauvelt, "Unfolding Identities," in *The Education of an E-Designer*, ed. Steven Heller (New York: Allworth Press, 2001), 119.

21 On the concept of flow as a characteristic specific to television, see the chapter "Programming: Distribution and Flow" in Raymond Williams, *Television: Technology and Cultural Form* (London: Routledge, 2003), 77–120.

22 Blauvelt, "Unfolding Identities," 120.

he moves groping at first, then staggering. This is obviously related to the fact that the man's gaze is clouded: his glassy eyes seem to offer no support on the way out, which is characterized by a constant stumbling and stumbling. On his path, which in the second section traverses the streets of Manhattan, a momentous collision occurs. The character, looking for someone to help him, stretches his arm out—and loses it the very next moment. This loss is initiated by an encounter with another person, a white character. It happens—and this is the unsettling element of it—almost casually, as if en passant. The actually irritating aspect, however, is that this physical mutilation has no organic characteristics. No blood flows from the maimed body nor from the amputated extremity. Rather, it gives the impression of an insubstantial hollow mold that splinters off from the body to ultimately break open and shatter into pieces as it hits the ground. Following this, the protagonist increasingly loses further limbs, and always in the same way. The third section then shows the man in a parking garage, where he runs into a group of breakdancers. But even this enclosed space does not offer any protection or is able to stop the process of his limbs breaking off. In the last section, the injured man, who can only move with difficulty, namely by hopping on his single remaining leg, gets back to the street, where he is hit by a taxi. This process, too, seems to take place almost imperceptibly: neither does the car slow down nor does a corpse remain on the street. Instead, all that can be seen are flying splinters and fragments that no longer allow any conclusion about the original form.

As disturbing as these events may seem, they are markedly reminiscent of Fanon's reflections on the structure of the colonial gaze relationship. Fanon speaks of the "countless facets of my being,"[23] that he considers the consequence of a white regime of the gaze; of a body "burst apart" and made of "fragments,"[24] which remain as the effects of a destroyed self. It almost seems as if director Chris Cunningham were illustrating the ideas developed by Fanon in order to ultimately come to a similar result: "The black man has no ontological resistance in the eyes of the white man."[25] The relationship of the gaze would not then be a reciprocal one; the black man, due to his unlimited racial visibility, would remain condemned to subjecting himself to an overpowering white apparatus of the gaze and surrender himself to the point

23 Fanon, *Black Skins, White Masks*, 114.

24 Ibid., 109.

25 Ibid., 110.

of losing himself. Does Cunningham's video, therefore, concern critical reflection on colonialism and its consequences, a situation of the colliding of various cultures that is still having an effect on the present?

This is possible, but perhaps it also concerns something further. Unlike in "Black or White", Cunningham's video makes clear that the skin is not a shell under which the substantial lies hidden, but that the skin itself is the substantial. Against this background, the pointedly presented motif of the skin in the video can again be tied back to television in its double function of visuality and tactility. If one follows its etymological elements, television seems to involve distance, not proximity. Nevertheless, it has something to do with touching—such as in regards to the remote control, or more accurately put, in regards to the buttons on the remote control. In itself a highly fleeting action, touch comes into its own with the push of buttons on a remote: "The moment of switching—the push of the button—[…] marks and produces the difference between before and after, actuality and virtuality. It is the point at which parallel programs converge and the events on the screen are synchronized with those in front of the screen."[26] Therefore, there seems to be a unique form of touch inherent in television, a moment of encounter at least, which makes both the sharp distinction of media of proximity and media of distance, as well as that of visuality and tactility, appear unproductive. Something comes together here that does not belong together according to the usual models of categorization. It involves a type of contact in which seeing and touch no longer serve separate registers but work together. With this, media theory questions can also be posed in a different way. For as little as television can be conceived of as the medium of panoptic observation, so too does a media theory perspective still indebted to the primacy of the visual seem to be capable of doing justice to the situation described above—especially not when video platforms like YouTube or Vimeo, along with television, are also opening up new forms and surfaces for touching and clicking.

For this reason, Cunningham's video can also be considered as an exemplary moment of transition, in which the meeting of gaze and touch become conceivable as an encounter mediated by media aesthetics. A conception that would solely concentrate on the visual, then, would fall apart due to its fixation on the gaze. Because at the core of the video, there is a type of otherness that is not solely founded on its visibility. This does not exclusively involve the

26 Lorenz Engell, *Thinking Through Television* (Amsterdam: Amsterdam University Press, 2019), 39.

visual perception and interpretation of the skin of a counterpart as the skin of the Other perceived by the gaze but involves something further, something working with and within this. Put another way: it involves a body surface whose foreignness is not primarily a result of the distance of observation but an irritation that occurs in the mode of touching and being touched. The unsettling fragmentation shown in the video does not occur due to a hostile look from someone but en passant, bumping into each other, in other words, at the point the bodies come into contact at the moment of touch. This does not mean that the visual should be negated or completely done away with; rather, one must now take into account a different vanishing point, an expanded zone of encounter. The following will address further implications of this vanishing point.

4. Contacting

In his study *The Skin-Ego*, Didier Anzieu develops a model that attempts to counter the concentration on the visual as the primary access point of all (self-)perception.[27] The work's core idea is to shift ego-genesis from a purely imaginary scenario into the realm of the somatic, for unlike Lacan, Anzieu does not conceive of the (mirror-)image as a determined site of subject constitution but ascribes to physical self-perception a prior role as creator of the ego-function. Anzieu points out that of all our senses, the sense of touch develops first, beginning at the embryonic stage. After birth as well, it is first the tactile, then the auditive, and only then visual perception that determines the infant's experiences. Furthermore, Anzieu emphasizes that in the embryo, skin and brain are formed from one and the same membrane, the ectoderm, and that both are, by their very nature, surfaces that constitute the subject in mutual reference. Thus, Anzieu asks: "What if thought were as much a matter of the skin as of the brain? And what if the Ego, now defined as the Skin-ego, had the structure of a wrapping?"[28] In relation to the ego-experience, the skin has a special mediating position, because as a tactile sensory organ, it organizes the data of the external world and transports them, in the form of pain and temperature sensations to the internal world, where they are processed psychologically, for example in the form of emotional mechanisms of

27 See Didier Anzieu, *The Skin-Ego*, trans. Naomi Segal (London: Routledge, 2016).

28 Ibid., 10.

approval or defense. As a channel of information, skin thus represents an important pass-through for both the physical and the psychic constitution of the subject. In addition, the skin has the significant function of a container, since, as a medium of visual representation, it offers a surface structure into which the forms of identificatory subjectivity can be inscribed: "The Skin-ego is the original parchment that acts as a palimpsest, preserving the crossed-out, scratched-through, over-written drafts of an 'original' pre-verbal writing made of traces on the skin."[29]

This concept of skin as an inscription surface has been repeatedly addressed within cultural theory. Dietmar Kamper and Christoph Wulf, for example, assume a "scar script" that is spread along the body's surface as a legible experience of the body.[30] Barbara Duden's project of a cultural history of the body also emphasizes historical moments of encoding that participate in the construction of each specific constitution of a bodily shell.[31] Skin, however, not only serves to manifest inner impulses to the outer world; it is simultaneously the medium of tactile body contact, where the perception of Self and Other come together in the mode of touch. The effect is a multifaceted one: on the one hand, skin forms a seal against one's environment that surrounds the self as a protective or constricting shell, whereas, on the other hand, it is permeable in the sense that it is basically capable of transporting sensations. Touch represents an additional ambivalent process of duplication, since it stands for the reciprocity of palpation and sensing, which come together in mutual physical contact. Elizabeth Grosz characterizes this physical process as "double sensation" and explains: "The information provided by the surface of the skin is both endogenous and exogenous, active and passive, receptive and expressive, the only sense able to provide the 'double sensation.' Double sensations are those in which the subject utilizes one part of the body to touch another, thus exhibiting the interchangeability of active and passive sensations, of those positions of subject and object."[32]

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29 Ibid., 114.

30 Cf. Dietmar Kamper and Christoph Wulf, "Lektüre einer Narbenschrift. Der menschliche Körper als Gegenstand und Gedächtnis von historischer Gewalt," in *Transfiguration des Körpers. Spuren der Gewalt in der Geschichte*, ed. Dietmar Kamper and Christoph Wulf, 1–7 (Berlin: Reimer, 1989).

31 Cf. Barbara Duden, *The Woman Beneath the Skin: A Doctor's Patients in Eighteenth-Century Germany* (Cambridge, MA: Harvard University Press 1991).

32 Elizabeth Grosz, *Volatile Bodies: Toward a Corporeal Feminism* (Bloomington: Indiana University Press, 1994), 35–36.

In contrast to the visual impression of skin, which arises when observed from a distance, the tactile impression of skin is that of an organ of sensation, being exposed to a confrontation that it cannot escape. In one sense, tactile contact forms the intersection between the self and Other and thus stands for a type of ambivalence that Dieter Mersch characterizes as "self-doubling."[33] What is crucial in this context, according to Mersch, is the fact that the tactile functions as a sense without distance, as an overcoming of difference which is proliferated as an inevitable transgression of boundaries:

> Consequently, the tactile is primarily a sense of indifference; it does not tolerate withdrawal. Its format is diffusion, the dissolution of boundaries. Interior and exterior, like subject and object or Ego and Other, flow relentlessly into one another: I touch a surface just as much as it touches me. By contrast, the gaze 'distances' even when fascinated; what we feel moves instead to the body, we touch it with our own physicality. The whole structure of tactility follows this logic, which can also be described as a structure of self-doubling, in the sense that, in touching something, we are simultaneously toucher and touched. We not only reach for a thing, an object, a body, we are also approached [*angegangen*] by what we touch—with all of the connotations of 'approach'[*Angang*], of affect.[34]

Skin thus becomes, as it were, a medium of conjunction that questions difference itself and opens up its own terrain of non-delimitation.

The relationship between vision and tactility has been addressed frequently in media theory. Hartmut Böhme, for example, points out the fact that vision can in no way be declared as a sense exclusively defined by distance but that seeing is an act closely tied to touch and contact. In his plea for epistemologically combining both of these modes of perception, Böhme asks: "Could it be that vision is a type of derivative touching? Do we not immediately know what it means to contemplate something [*ins Auge fassen*, literally "grasp into the eye"], to lose sight of something—just as one loses something touched by the skin in one's hand so that one no longer has

33 Dieter Mersch, "Taktilität und Entgrenzung," in *Haut* (*Konkursbuch* 41), ed. Christine Hanke and Regina Nössler (Tübingen: Konkursbuch-Verlag Gehrke, 2003), 236.

34 Ibid., 235. Note on translation: The transitive verb *angehen* in German can also have a negative connotation, such as "attack" or "tackle."

contact with it."[35] While the long-defended privileging of the visual sense of distance in the history of theory implied a "repression of the lower senses,"[36] and while this orientation toward vision "has long hindered the elaboration of a theory of perception that does justice to phenomena,"[37] Böhme sees the possibility of a new theoretical approach in the electronic age. Thus, "only today, when the deluge of images in the media inundates not only the individual but the entire globe, do advanced media theorists consider whether visual media are not, in fact, media of touch. One can already notice the fact that touching and feeling will be the next point of attack in the electronic colonization of the senses."[38] Even though Böhme does not name any of these "advanced media theorists," it is possible to draw conclusions about the most concise approaches of a medium-specific type of tactility. For example, Marshall McLuhan's concept of technology as an extension of organs, as an extension of human senses and nerves through media, has been highly influential. Within this conception, McLuhan elaborates his understanding of multisensory perception, a type of comprehensive perception that involves all of the senses. The tactile, accordingly, cannot be reduced to a single organ but is a result of the combination and mutual intertwining of all the senses:

> Our very word 'grasp' or 'apprehension' points to the process of getting at one thing through another, of handling and sensing many facets at a time through more than one sense at a time. It begins to be evident that 'touch' is not skin but the interplay of the senses, and the 'keep in touch' and 'getting in touch' is a matter of fruitful meeting of senses, of sight translated into sound and sound into movement, and taste and smell.[39]

Sensory sensations, according to McLuhan, are characterized by their transferability, by a form of vicissitude from which the perception of the world emerges. Only through this interplay of various forms and facets of sensory impressions can "getting in touch" at all be made possible.

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35 Hartmut Böhme, "Der Tastsinn im Gefüge der Sinne. Anthropologische und historische Ansichten vorsprachlicher Aisthesis," in *Tasten* (*Schriftenreihe Forum* 7), ed. Uta Brandes and Claudia Neumann (Göttingen: Steidl, 1996), 201.

36 Ibid., 206.

37 Ibid.

38 Ibid.

39 Marshall McLuhan, *Understanding Media: The Extensions of Man* (Cambridge, MA: MIT Press, 1994), 60.

Following Marshall McLuhan's theses about the extensions of the human sensory system, Derrick de Kerckhove has developed his concept of the "Skin of Culture" of the electronic age[40] Kerckhove's understanding of a medially organized skin is informed by McLuhan's statement: "After centuries of being fully clad and of being contained in uniform visual space, the electric age ushers us into a world in which we live and breathe and listen with the entire epidermis."[41] The organic context of functions stated by McLuhan is summarized by Kerckhove in a model that focuses on the surface of the medium, on design as the resonance of technological innovation. Kerckhove explains: "Design often echoes the specific character of technology and corresponds to its basic pulse. Being the visible, audible or textual outer shape of cultural artefacts, design emerges as what can be called the 'skin of culture.'"[42] Kerckhove's advocacy for an understanding of perceptive experience based on tactility presents a further link to McLuhan's ideas. Similar to McLuhan, Kerckhove assumes that the connection of sensory perception with technical media is inextricable and that the complexity of these connections cannot be made comprehensible by reducing it to only one sense. Accordingly, the conception of a visually organized culture is to be replaced by that of a tactile connection characterized by worldwide systems of networks: "The physical sensation of being somewhere specific is a tactile experience, not a visual one. It is environmental, not frontal. It is comprehensive, not exclusive. My point-of-being, instead of distancing me from reality like a point-of-view, becomes my point of entry into sharing the world."[43] Kerckhove stresses the fact that a culture based on visuality suppresses the fullness of sensory perception. He sees the possibility of a stimulation of the tactile faculty, however, in the development of new computer technologies. Thus, Kerckhove speaks of a "new tangibility," of a "global proprioception"[44] that could be ushered in by computer-based network creation and states: "Every system of interaction between body and machine is a modification of the ability to be able to touch and to be touched.

40 Derrick de Kerckhove, *The Skin of Culture: Investigating the New Electronic Reality* (London: Kogan Page, 1997).

41 McLuhan, *Understanding Media*, 122.

42 Kerckhove, *The Skin of Culture*, 154.

43 Ibid., 178.

44 Derrick de Kerckhove, "Propriodezeption und Autonomation," in *Tasten* (*Schriftenreihe Forum* 7), ed. Uta Brandes and Claudia Neumann (Göttingen: Steidl, 1996), 334.

With these machines, we again find our way back to the elementary tangibility of our bodies."[45] Kerckhove sees the temporary peak of the medium-tactile in satellite technology, which continues the extension of man in the form of a new global shell: "The computer-based body transcends the traditional limitations embedded organically in the skin. Our new skin is the Earth's atmosphere sensitized by its satellites."[46] A continuation of the idea of a computer-based organic expansion can be found in Paul Virilio, who conceives of the possibilities of interactivity between man and machine as a new perspective on the tactile. In the context of cybersex, Virilio speaks of a "touching at a distance, which in our day will ultimately complement the classical perspectives inherent to the sense of sight and hearing."[47] The extension of man to an electronic shell, according to Virilio, carries with it the promise of potential invulnerability and would modulate the sensory-perceptive surface of perception into a matrix that would enable the seamless connection of man to the network of telecommunication.

It almost seems as if the age of globalization has erased all distances and enabled us to be in touch with the world. Nevertheless, it would be insufficient to consider the level of media encounters as a possibility of a liberation from all boundaries. While the video for "Black or White" still seems to be looking to substitute separation and distance with nearness and fusion, the video for "Africa Shox" is hinting at something quite different. Here, the desire to enter into contact fails, because it itself is full of contradictions: the result is not a comprehensive understanding but a violent collision. Lorenz Engell offers the following for consideration: "A description of media under the guiding principle of groping, touch, and sensual proximity will […] predominantly bring to light instabilities and processes of change, including catastrophic ones."[48] And are these instabilities not also already inherent in the notion of skin as a surface between the self and the world, reminding us that the relationship between interior and exterior does not follow any rigid demarcation but can

45 Ibid.

46 Ibid., 333.

47 Paul Virilio, "Cybersex. Von der abweichenden zur ausweichenden Sexualität," *Lettre International* 32 (1996): 75.

48 Lorenz Engell, "Sinn und Sinnlichkeit (Turm und Taste). Über Fern- und Nahmedien," *Ausfahrt nach Babylon. Essais und Vorträge zur Kritik der Medienkultur*, ed. Lorenz Engell (Weimar: Verlag und Datenbank für Geisteswissenschaften, 2000), 324.

only be thought of as a porous zone of transition and uncertainty? As a plane at whose borders all encounters experience their respective (im)possibilities?

Let us briefly return to the starting point of our considerations. Frantz Fanon's concept of the "racial epidermal schema" provided central insights into the relationship between skin and contact. It is not surprising that these insights are tied to the observation of non-white skin, for, according to Claudia Benthien, the "problematic of the modern-era subject being 'in' a specific skin, and of problematizing this, is nowhere found so radicalized as in relation to 'racial' skin."[49] As examples of the skin's ability to be staged and identified as form and surface, two music videos were presented: "Black or White" and "Africa Shox." The focus on these two videos was to observe a relation of visuality and tactility made recognizable by and through the skin—and to ask whether and how this relation can be brought together with different modes of media perception. It was presupposed that sensory perception is not something natural or ahistorical but adapts itself to new media, forming itself according to their requirements. Along with this, we assumed that the ocular-centric paradigm, thinking in visual terms, may have possibly reached an end point. This was investigated along a consideration of the medium of television, which seems to be putting the concept of the tactile back on the map—at least it could occasion a redefinition that revalues and reassesses touch as a media mode of proximity. This approach is not limited to television but could also take into account other technological developments—as in McLuhan's and Kerckhove's reflections on multisensory technologies and worldwide networks. The tactile seems to have found new loci in the medium of touch and switch, so much so that we can then question "what stakes haptics have in the visual primacy of evidence."[50] It is possible that the encounter zone of visuality and tactility could become a medial form of contact in its own right—and possibly the aesthetics of physical contact in music videos could be pointing us to this.

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49 Benthien, *Im Leibe wohnen*, 215. Note on translation: I have translated "being 'in'" from the word Benthien uses here, *stecken*, a highly concrete term for something to be located in something or somewhere else.

50 Bergermann, "Tastaturen des Wissens", 319.

Going in Circles
Rotation and Immersion in Björk's "Wanderlust"

"Things go in circles" (Björk)[1]

"Wanderlust" (Encyclopedia Pictura, 2008), a music video released in 2008, pushes boundaries by opening up new modes of perception. As a stereoscopic 3D production, this work initially seemed to detach itself from established music platforms, such as conventional music television, whose channels would find it quite inconvenient to broadcast.[2] Furthermore, and this is decisive, its aesthetic arrangement refers to pictorial principles that are no longer aligned with the rectangular frame, but transcend it and expand it as a circular form. "Wanderlust" presents its image world in the form of rounded optics reminiscent of the aesthetics of iris diaphragms. The left and right edges of the frame are concavely curved, centering the action within the image. Consequently, a viewing configuration arises that gives up the logic of vertical and horizontal alignments and replaces them with curved lines. As if looking through binoculars, we view a world of wonders that opens up before our eyes: Björk travels through an artificial landscape, interacts with mythical creatures, and invites us to immerse ourselves in this experience of wandering and wondering.

The following will investigate, in two sections, the media-aesthetic implications that are connected with the orientation towards a round image form. The first section addresses the stylistic staging of the round, with recurring models and motifs that the "Wanderlust" music video organizes as a comprehensive principle of rotation and intensifies through techniques of immersion. The second section deals with the video's production logic and

1 http://www.bjork.fr/Harp-Magazine-novembre-2007.

2 The music video was released in 2008 at first on a DVD that included 3D glasses. Afterwards, it was published online in both 2D and 3D.

ultimately questions the future of an expanded media dispositif whose digital image worlds seem to find their vanishing point in an innovative focus on roundness.

1. Motif

The music video begins with foghorns sounds, whose tones pull us out of darkness into the world now being revealed. At a watering hole a herd of bison can be seen, in the middle of which Björk suddenly appears and begins singing her song "Wanderlust." What follows then is a trek whose movement is not characterized by clearly defined steps but by a perpetual flowing and gliding. Wearing a folkloric costume and outfitted with a hiking backpack, Björk begins her journey, embarking on a river through a rugged mountain landscape. A universe of its own opens up here, an imaginary space that is constantly invoking and evoking the dissolution of stable orders. This includes, for example, the distortion and shifting of proportions: the water buffalo are oversized; the female hiker, however, seems miniature by comparison. Moreover, it involves the ambiguity of volumes and planes whose structural principles flow into each other: the images oscillate between painted staffages and relief-like elements. Ultimately, though, what is particularly pronounced is the staging of surreal creatures and forms that are difficult to put into categories of our everyday experience.

What stands out here is, above all, the demon whose extremities are already wriggling their way out of Björk's backpack at the beginning of her journey. As a colorless double of the hiker character, it comes across as her dark doppelgänger whose weight impedes her movements and thus prevents her from progressing. This interruption of her continuing onward can be seen in a scene that presents the intertwining of two opposing movements as a transition into the circular. As if wrestling in a "ring," the two bodies entangle one another in a type of mirroring inversion: the demon's feet are next to Björk's head, and its head is next to her feet. In this arrangement, the doubled figure moves in a continuous rollover from the right to the left of the frame. What was above ist turned downward, and what was standing up straight is set in gyration. As a result, a kind of rotation develops that goes beyond the supposedly straight path and represents a delaying interruption of the linear course. Already this scene addresses a central principle of the round: it opposes the dominant viewing direction, at least for a short time, with a different order.

The transposition and relativization of the points of orientation from above and below, as well as forwards and backwards, set into motion a type of rotation that confounds our established notions of structured image composition. As a result, an alternative orientation is developed that begins to detach itself from conventional rules and restrictions in order to counter it with a different visual logic.

This visual logic is not only advanced by the figures' movements but also dynamized by the flowing and rushing of the water. Already at the beginning of the journey, we are dealing with a viewing arrangement that draws the visual vanishing lines into the depth of the image space. Following the opening at the watering hole, the video opens up a perspective that draws our line of vision from the foreground into the depths of the image (Fig. 14). The animated rapids in the river appear like individual strands, and, like liquid struts, they seem to carry us along to pull us from the image's exterior into its interior. This impression is augmented and condensed in those moments in which the video's circular image is totally focused on its view of the river—in other words, it changes the field of view so that the surrounding banks disappear and we find ourselves wholly in the water. Particularly conspicuous is a shot that portrays the bubbling of the river as both a pulsing rush of water bubbles and fountains of foam. The water bubbles along with the rhythm of the electronic beat and endows our visual experience with a new dynamic.

Fig. 14: *Wanderlust*

From out of a space of the solid, structured—the landscape along with its mountain range and meadows along the shores—something transitions into the diffuse, the blurry. Suddenly, all possibilities of orientation have disappeared: there are no longer any relations, no reliable relationships between things, no coordinates structuring the field of vision. As a result, the viewer also loses his or her bearings, since the imbalanced space of the water makes any stable position impossible. With the immersion in the water, the clear view is undermined. In the water, it is primarily the movement of the waves that causes constant visual unrest and produces various states of the visible. Gilles Deleuze has pointed out that cinema "found in water [...] the promise or implication of another state of perception: a more than human perception, a perception not tailored to solids, which no longer had the solid as object, as condition, as milieu. A more delicate and vaster perception, a molecular perception."[3] In this context, the liquifying of perception manifests its specifically medial achievement in no longer letting the gaze stick to solid or fixed forms. Rather, the film's "fluid universe"[4] tests the dissolution of solidification in order to forge a path toward a different type of perception.

What is striking about the example of "Wanderlust" is that the moment of immersion as well as the process of a perceptive transformation initiated with it and through it, becomes mobile within the image itself. This moment is partially tied to the subjective perspective of the traveling figure of Björk but it also detaches from her again. In the process, the abysmal nature of the whirlpool, its suction power, plays a pivotal role (Fig. 15). Several times, we encounter the circling, turning movement of the water—and, therefore, an inversion of the first movement of the river. While the bubbling of the water, the pulsing of the bubbles and waves, evokes a direction from below to above, as if they are coming at us, the whirlpool creates the opposite effect of a visual force of attraction. As if a downwards moving gyrostat, it seems to pull us into the depths, suck us into diffuse darkness, and swallow us there. What is striking here is the polarization inward, a self-accelerating force that leads from the curved edge of the frame right into the center of the picture. Thereby a fluid transition occurs between the view from the outside and the detachment from it. One could turn the image around any which way: top and

3 Gilles Deleuze, *Cinema 1: The Movement-Image*, trans. Hugh Tomlinson and Barbara Habberjam (Minneapolis: University of Minnesota Press, 1997), 80.

4 Edgar Morin, *The Cinema, or The Imaginary Man*, trans. Lorraine Mortimer (Minneapolis: University of Minnesota, 2005), 64.

bottom, left and right, can no longer be made out. The frame of the coherent whole is thus itself called into question.

Fig. 15: *Wanderlust*

It stands to reason that this process of diving in and out should be combined with the perceptive disposition of immersion. This is already indicated by the term's etymology, since the Latin word *immersio* refers to the experience of diving into water:

> Immersion is a metaphorical term derived from the physical experience of being submerged in water. We seek the same feeling from a psychologically immersive experience that we do from a plunge in the ocean or swimming pool: the sensation of being surrounded by a completely other reality, as different as water is from air, that takes over all of our attention, our whole perceptual apparatus.[5]

For film, the term "immersion" is primarily used as an indication of the dissolution of spatial boundaries; as a reference to the fact that the perceptive diversity of the camera's view enables the viewer to feel an all-encompassing sense of being involved in the action onscreen. Thus, Béla Balázs noted in 1930:

> [Film] has eliminated the spectator's position of fixed distance: a distance that hitherto has been an essential feature of the visual arts. The spectator

5 Janet H. Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (New York: Free Press, 1997), 98.

> no longer stands outside a hermetic world of art which is framed within an image or by the stage. Here the work of art is no insulated space, manifesting itself as a microcosm and metaphor and subsisting in a different space, to which there is no access. The camera takes my eye along with it. Into the very heart of the image.[6]

Crucial for immersion, as we see and experience it in "Wanderlust", is the spiral movement of the whirlpool, for it enables an enormous aesthetic condensation. With the turning movement continuing unabated, an elongation into the depths of the image space is achieved, which converts the incompleteness of the circling and rotating into a type of visual vertigo. Contemplative observation is excluded; here, the visual arrangement does not provide for capturing space but dissolving it. A reliable shaping of space exists merely as an illusion and can be stripped away at any time.

In fact, the music video for "Wanderlust" invokes this disappearance of security and stability repeatedly in its bizarre image worlds; both in terms of the spatial stabilization of the viewing position and of the level of meaning-making. One sees ship locks, tunnel-like round forms, falling motions, whirlpools, and spirals; in other words, configurations that constantly visualize the sense of groundlessness in the viewer's sense of seeing and sensory perception. In addition, scenes are integrated into the video that present, in a reflexive way, both the process and the effect of visual immersion—for example, when eyes appear in the background of the picture that seem to look at us from a distance or when two oversized hands reach out to the flying-falling or, rather, swimming-floating Björk to catch it at the end of the visual tunnel (Fig. 16).

Everything that constitutes the immersive experience as an image-induced process—the depth of the viewing experience, the fluid visuality of perception, the comprehensive, indeed all-encompassing dispositif of 3D technology—is again here turned back onto itself. In this sense, the circle shape that makes up the central motif of the music video can also be considered on a meta-level: "Wanderlust" does not just figuratively turn in a round but also makes it comprehensible as a medial effect.

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6 Béla Balázs, "The Productive Camera," in *Béla Balázs: Early Film Theory.* Visible Man *and* The Spirit of Film, trans. Rodney Livingstone, ed. Erica Carter (New York: Berghahn, 2010), 99.

Fig. 16: *Wanderlust*

This includes, at first, the visual construction of the gyrostat, that is, the formation of the circle in the circle, which is augmented into a moving spiral shape; but also the reciprocally exponentiating relation of sound and image that the video designs as an audiovisual rhythmic figuration. "Wanderlust" is a loop through and through. Already, the media format of music video medium is closely tied to forms of rotation and recursion. As a short and compressed work, the music video relies on repeated reception, on a type of repetition that can increase to heavy rotation. Moreover, the inner organization of the video is also connected to the repetitive structure of the music: to the succession of verses and chorus in the song, to the rhyme scheme, and to the electronic samples. And, ultimately, the video is itself a reproduction; it stages a pop song that has already been produced, which it circulates as a stylized duplication of itself.

The principle of rotation in the video "Wanderlust" can thus be understood as the simultaneity of the centripetal—in the sense of a set of motifs that polarizes one's view into the interior of the image—and of the centrifugal—in the sense of a referential type of radiation that goes beyond the inner image world. Both forces compel each other reciprocally and develop an all-encompassing dynamic of rotation. "Wanderlust" is an aesthetic phenomenon of the threshold whose production logic points to a particular process of transformation, namely the potential detachment of the image from the rectangle and the frame as a fundamental aesthetic orientation. In the following, I will discuss what this development means for medial transformations of modes of

perception and visual arrangements and to what extent it implies the emergence of visual principles of roundness.

2. Medium

The conception and composition of the round image world of "Wanderlust" is markedly distinguished from conventional music video productions. The production lasted nine months from the first idea to the finished work of art; a considerable effort that is highly unusual for pop music, which typically needs to be promoted in a timely manner. *Encyclopedia Pictura* was responsible for the creation of the video's artificial universe, an artist collective that primarily deals with the combination of classical animation and Computer-Generated Imagery, or CGI. Isaiah Saxon describes the challenges of the aesthetic process of conception as follows:

> For me the hardest aspect was trying to achieve an immersive, complete, and very specific aesthetic—because the only thing in the video that isn't hand crafted is Bjork's face, hands, and feet. I used my own hands everyday but also worked with over 50 key artists to achieve the forms and textures of this world. We tried to lodge ideas into the forms and use the patterns and textures of these forms to transmit meaning to the viewer.[7]

The work done on models was crucial for the development of the artificial world in "Wanderlust"—both materially as well as virtually. The artificial creatures were generated by first shaping them by hand out of modeling clay or silicone and then bringing them to life through movement. Breathing a spirit or a soul into them—since this is precisely what "animation" means—was achieved by means of claymotion, that is, a stop-motion technique in which the plasticine figures were photographed frame-by-frame. This process was supplemented by further animation techniques, such as the physical movement of the puppets or the acrobatics of the human bodies in front of a green screen, the orientation of the 3D camera in the miniature, studio-like model structure, computer-generated particle animation for the water worlds, pil-

7 Ned Beauman, "Creating Bjork's 'Wanderlust' Video: Encyclopedia Pictura Expand the Realms of Direct Experience," *Dazed Digital*, April 8, 2008, https://www.dazeddigital.com/music/article/296/1/creating-bjorks-wanderlust-video.

larboxing for the round picture effect, as well as layering and compositing to combine all of the individual elements and layers.

What has been created here, then, is a circumnavigation of illusion techniques, a tour through their history, their past, and their future. In this sense, the name of the artist collective, *Encyclopedia Pictura*, actually refers to a comprehensive collection of image forms, of pictorial understandings and media relations. The dream of an artificially generated fantasy world appears as if through a spherical magnifying glass, along with the longing to completely immerse and lose oneself within it. Two aesthetic practices are salient here: the orientation toward the round form, on the one hand, and the image world's becoming plastic on the other hand. Both practices are embedded in a long media tradition: the circular form recalls a telescope, whereas the volume effects recall stereoscopy. If one takes the dream of immersion a bit further, one would also have to consider the dispositif of the circle-shaped enclosing image space, that is, the 360° illusion. Once again, we land within the round and, thereby, in a sense, in the gyroscope of history. Within this context, Oliver Grau stresses

> Despite changing media technological phenomena, the idea of the 360° image marked a continuum in art and media history. The overarching characteristic of this development was an interaction between large-screen spaces of immersion, which fully integrate the body (360° frescoes, panoramas, stereopticons, the Cinéorama, and IMAX cinema, up to current immersive processes in contemporary digital art). On the other hand, there are devices worn directly in front of the eyes, such as perspective boxes, stereoscopes, stereoscopic television, the Sensorama, and the head-mounted display. A history of the image without a frame, indeed without measurements, a history in which one can particularly recognize the human-image relationship in relation to time-specific perception and media competency and whose core phenomenon—immersion—then arises when the work of art and the advanced image apparatus, the message and the medium, converge almost inextricably for the sake of perception.[8]

Currently, with the development of Virtual Reality glasses, the media history of immersion is entering a phase that is starting to invoke the round

8 Oliver Grau, "Immersion und Interaktion. Vom Rundfresko zum interaktiven Bildraum," *Medien Kunst Netz*, http://www.medienkunstnetz.de/themen/medienkunst_im_ueberblick/immersion/.

yet again. Already, the construction of the visual device—two circular lenses through which the computer-generated image landscape is viewed—points to the perception-specific focus on the principle of the round image. In the process, the overcoming of frame limitations is greatly increased. Due to physical proximity, virtual reality images appear considerably larger than conventional screen images. However, what is decisive for this is not solely the size but, moreover, also the image landscapes' expansive capabilities. Every visual impression can be immediately supplemented by an additional one; so the scenery always seems expandable and, therefore, potentially infinite. Because the visual world of Virtual Reality covers the viewer's entire field of view, it seems to surround, to encircle him or her.

Along with the reception technologies of Virtual Reality, its production apparatuses also seem to have found a new goal in the concept of the round. An example of this is *Project Beyond*, developed by Samsung. This is a camera apparatus for 3D panoramic shots that is supposed to solve the problem of very little format-appropriate content being available when new types of display technologies are introduced. Sixteen HD cameras are arranged around the outer edge of the circular device, each capturing at an angle of 45°. The individual images are then combined with the help of a specific 3D algorithm, so that they can be seen by users of VR glasses as one image all around them. As user-friendly equipment, *Beyond* is supposed to help ensure that not only more frameless images are seen but also produced by users, whereby the circulation of round images could experience an exponential boom.

Fig. 17: *Project Beyond*

Thus far, digital VR technology has been in an early experimental stage. What is already beginning to emerge, however, is a gradual detachment from the flat rectangular aesthetic, from its framed limitation and its perspective-guiding geometry. Digital images have a specific elasticity, they are not neces-

sarily bound to rectangular frames but can transcend and even question them. Our gaze has long since ceased to be aligned with fixed screens or monitors, and image forms have long since ceased to be exclusively adapted to them. New dispositifs of perception are developing before our very eyes and, along with them, new image aesthetics, whose flexibility and malleability point us toward round, rather than rectangular organizational principles. In the face of digital images in the making, Gilles Deleuze notes:

> The new images no longer have any outside (out-of-field), any more than they are internalized in a whole; rather, they have […] a power to turn back on themselves. They are the object of a perpetual reorganization, in which a new image can arise from any point whatever of the preceding image. The organization of space here loses its privileged directions, and first of all the privilege of the vertical which the position of the screen still displays, in favour of an omni-directional space which constantly varies its angles and coordinates, to exchange the vertical and the horizontal.[9]

If this holds true, we then find ourselves at the beginning of a profound transformation that will entail a new logic of the image. In this sense, Björk's "Wanderlust" can be conceived of as a transitional phenomenon, as an artform whose wandering movement is already announcing a forge ahead into new image worlds. The decisive factor would then no longer be the geometry of the rectangle, but the generation of flexible forms, the curvature of orientation lines, and the rotation of formerly stable fixations. Our image world breaks free of its frame, and this process redirects our sight: the future of images leads into the round.

9 Gilles Deleuze, *Cinema 2: The Time-Image*, trans. Hugh Tomlinson and Robert Galeta (Minneapolis: University of Minnesota Press, 2003), 265.

APPENDIX

Publication Data

1 – Fantastic Views. Superheroes, Visual Perception, and Digital Perspective
First published in *Superhero Synergies. Comic Book Characters Go Digital*, ed. James N. Gilmore and Matthias Stork (Lanham: Rowman & Littlefield, 2014), 41–56.

2 – Attraction, Simulation, Speculation: *The Day After Tomorrow*
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5 – The (Imaginary) Man of (Hollywood) Cinema: An Encounter with Edgar Morin
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6 – Back to the Beginning: Wim Wenders' *Pina* and the Spatial Aesthetics of 3D Cinema
First published as "Alles auf Anfang. Wim Wenders' *Pina* und der Raumzauber des 3D-Kinos," in *Wim Wenders* (*Film-Konzepte* 50), ed. Jörn Glasenapp (München: edition text + kritik, 2018), 111–120.

7 – Scars and Screens: *Nip/Tuck*
First published as "Scars ‚n' Screens. *Nip/Tuck*", in *Die neue Amerikanische Fernsehserie. Von Twin Peaks bis Mad Men*, ed. Claudia Lillge, Dustin Breitenwischer, Jörn Glasenapp, Elisabeth K. Paefgen (Paderborn: Fink, 2014), 281–301.

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First published as "Tipp-Ex: Kleine Korrekturen," in *Kulturen des Kleinen. Mikroformate in Literatur, Kunst und Medien*, ed. Sabiene Autsch, Claudia Öhlschläger, Leonie Süwolto (Paderborn: Fink 2014), 195–209.

10 – Micro Movies: On the Smartphone Film as Media Miniature
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11 – Strike a Pose: Robot Selfies
First published in *Exploring the Selfie: Historical, Analytical, and Theoretical Approaches to Digital Self-Photography*, ed. Julia Eckel, Jens Ruchatz and Sabine Wirth (London: Palgrave Macmillan 2018), 285–301.

12 – Instagramming: Instagram's Media Practices
First published as "Instagrammen," in *Historisches Wörterbuch des Mediengebrauchs. Band 3*, ed. Heiko Christians, Matthias Bickenbach and Nikolaus Wegmann (Köln: Böhlau, 2022).

13 – Right here, Right now: Evolution, Animation, and Music Video
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14 – Types and Bytes: Ludic Seriality and Digital Typography
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15 – Touch / Don't Touch: Visuality, Tactility, and Music Video
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16 – Going in Circles: Rotation and Immersion in Björk's *Wanderlust*
First published as "Wandern im Runden. Rotation und Immersion in Björks *Wanderlust*," in *Runde Formationen. Mediale Aspekte des Zirkulären,* ed. Joseph Imorde and Andreas Zeising (Siegen: universi 2019), 147–158.

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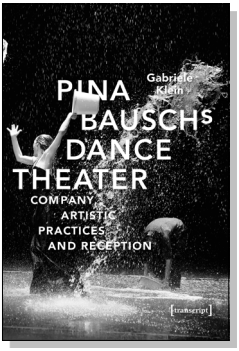

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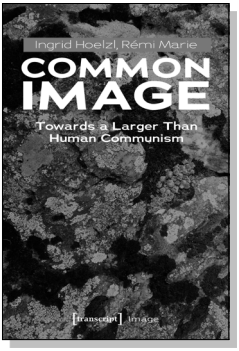

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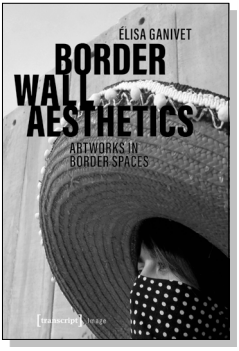

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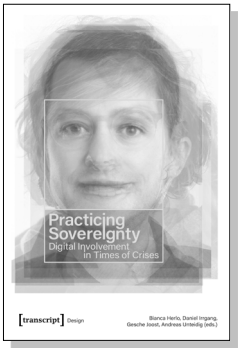

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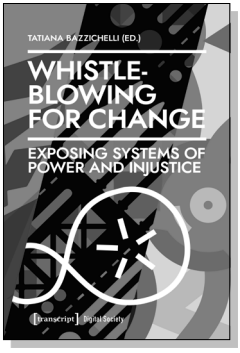

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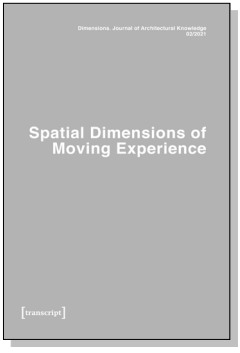

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