Screens

The Key Debates

Mutations and Appropriations
in European Film Studies

Series Editors
Ian Christie, Dominique Chateau, Annie van den Oever

Screens

From Materiality to Spectatorship – A Historical and Theoretical Reassessment

Edited by

Dominique Chateau
and José Moure

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Editorial

The original aim of the *Key Debates* series was to revisit the concepts and controversies that have shaped the field of film studies. Our intention was twofold: to clarify what was initially at stake in the founding texts and to clarify lines of transmission and re-interpretation in what remains a hybrid field of study that has "appropriated" and thus modified much of what it uses. The five volumes published to date take different approaches to this central mission, reviewing how early film theory adopted and developed literary theories of "strangeness" (*ostrannennie*); shifting concepts of subjectivity engendered by film; the variety of ways that film's audiences have been conceived; the persistence of debate around film as a technology; and the diverse range and broad scope of feminism in both film theory and praxis.

When this series was launched in 2010, after a phase of preparation that began in 2006, the impact of the digital revolution was already being felt in most areas of what had been the relatively discrete fields of "film," "television," and "new media." As these have continued to converge, most of the foundational concepts of film and media studies remain pertinent, while needing to be revisited in light of the rapid changes in media technology and viewing practices. Further volumes are now in preparation, reflecting this double concern to return to the origins of concepts and to track their inevitable modification over a century after many were first addressed. One such concept is that of narrative in screen media, and "stories" will be the subject of a future collection, exploring how these have been modified by interactive and increasingly mobile digital media, while widely considered central to the success of mainstream forms of cinema and television.

Meanwhile, screens and screening are among the key issues that continue to animate thinking about film and audiovisual media. While screens are strongly linked to the history of movies, the use of different types of screen relates to a variety of human practices. Far from being "demoted" by digital dematerialization, screens continue to develop and diversify. It therefore seems fitting that this sixth volume deals with a topic that is as relevant today as it is ubiquitous.

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Dominique Chateau and José Moure
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Introduction: Screen, a Concept in Progress

Dominique Chateau and José Moure

Obviously, there is no need to invent the reasons why "screens" is a relevant topic. It is almost impossible to imagine a country where screens are not used on a daily basis. There has been a significant inflation of papers and books dealing with this topic. One could easily run the risk of dwelling on the same old ideas, if it were not for the continual proliferation of the kinds of screens we use and of the various modes of screening we encounter. Throughout the 20th century, the theater screen was considered the primary and elite screen – the cinema experience, with its big screen, was synonymous with crowds attending great shows – but it was soon challenged by the smaller screen of television and the more intimate mode of screening it implied. Even smaller screens are now ubiquitous. Watching and reading mobile screens are such widespread practices that an individual who does without them is considered the odd man or woman out.

It does not mean that the old theater screen is now confined to media museums. We have to consider that the development of screens consists more of the accumulation and coexistence of old and new forms than a systematic switch from one to the other. We live in a multi-screen world. This means that from the cell phone to the IMAX screen and all the types in-between – "regular" theater, television, computer, tablet, smartphone – there is now the possibility to transform video content into a number of different formats, to use one type of screen in a wide range of situations or just to waste time going from one kind of screen to another. In general, living in a multi-screen world implies the growth of material and new ways of screening. It is not surprising, therefore, that this phenomenon has recently been reflected at the academic level too, both in terms of the increasing number of papers and books dealing with the screen and the topic of screening, and in the rise in new theoretical hypotheses and new historical insights.

It was only in the last quarter of the 13th century that the word *screen* was attested. Its etymology, traced back to medieval Europe, seems to derive from Old French *escren*, *escrein*, *escran* (modern French: *écran*); from Old Dutch *scerm*, *skirm* (modern Dutch: *scherm*); from Proto-Germanic *skirmiz* (modern German:

Schirm); and from Middle English *scren*, *screne*. These origins illustrate the beginnings of the word *screen* as a noun[1] referring to an object of protection and, notably, to a panel that protects against the fire's heat (fire screen). This everyday, commonplace object, whose function is to shelter or to safeguard the user from the heat of the hearth, contains the ideas of protection, divider, barrier, interposition, interceptor, filter, moderation, mask, or surface that one inevitably encounters in attempting to define the word *screen* through its multitude of synonyms.

From this first definition, to its numerous modern definitions and applications, the word *screen*, through the evolution of its usages and the diversification of its connotations, has evolved into a complicated term, the history of which is hard to trace. For nearly five centuries, it referred to various objects acting as a barrier or protection from fire, light, or wind. It was only in the 19th century that the term *screen* began to take on, by analogy – in the language of the physicist, the illusionist, and eventually the cineast – the meaning of a white or opaque reflective surface onto which images are projected, displayed, or attached. Even though some translations of ancient texts use the term retrospectively and anachronistically, the surface that receives the projection, be it a wall, a canvas, or a white paper sheet, could not properly be referenced as *screen* before the mid-19th century, when the optic sciences became increasingly popular. In the third edition of his *Dictionnaire universel des Sciences et des Lettres*, published in 1857, the Frenchman Marie Nicolas Bouillet defines the screen as "a small piece of furniture intended to protect oneself from the heat of the fireplace." It, he adds, "[i]s also called *screen* […] in optics, every white board onto which the image of an object is made to be projected."[2]

On December 28, 1895, two events occurred that were to play a major role in the growing complexity of the notion of *screen* and the enrichment of its semantic field: the first public showing of the Lumière Cinematograph at the Grand Café on the Boulevard des Capucines in Paris and the discovery of X-rays by Wilhelm Conrad Röntgen in Würzberg, Germany.[3] With the Lumière Cinematograph, the screen became the essential element of the cinematographic apparatus and of the filmic experience: the spectator is positioned within a theater, in a darkened room, the eyes watching the screen with the projection of the film coming from behind the spectator's head. Within a few years, the word *screen* was being used as a metonymy to represent and refer to the cinema, as the art of the screen, as opposed to the theater as the art of the stage. With the barium platinocyanide screen on which Röntgen viewed the first radiographic image, his own flickering ghostly skeleton, the screen became a data display apparatus, providing an opportunity to visualize not only the basic signs of life (the simple movements of everyday life collected and reproduced by the Cinematograph), but also invisible signals displayed on a monitor, where it can be viewed and interpreted.

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From the screen as an object used to protect, obscure, or conceal, to the screen as an architectural and sculptural apparatus used to separate or divide space in a process of exclusion or delimitation, to the screen as a surface or a receptacle on which images are projected or displayed, to the screen as a metaphorical term[4] or a site of mediation involving a relationship between what is shown and what remains under cover; from the late 19th century the word "screen" offered a wide range of meanings and usages that would only increase throughout the 20th century.

Today, an online search for "screen" reveals numerous entries where the meaning of the word is identical to that of *Dickens on Screen*, a book examining the many film adaptations of Dickens's works.[5] Not only is "screen" found among those words that have a series of other meanings, but, thanks to the flexibility of the English language, the same word can be used alternatively as a noun, an adjective, or a verb. "Screen" can be associated with a plethora of terms. Compounding it forms various combinations where it is either used as a prefix (screen shot, screen name) or a suffix (touchscreen, flat-screen). Furthermore, a derivative like "screening" can denote both the appearance of a movie or a tool of preventive medicine, for instance, genetic screening. This flexibility opens an indefinitely expanded semantic field.

In a related matter, it is worth noticing that screen always has both a broad sense and a narrow sense. It denotes a specific thing or a part of it – a computer screen – or the cinema, when, for example, we say that a book is adapted for the screen or that a star of the screen is born. The sense may also waver between the two poles; for example, when we say that a plane vanished from the radar screen it means both the very precise signal on the screen (a green signal on a black screen) and its reference, the plane. There appears to be a similar duality in other languages between the screen that hides – a veil, a screen of trees, a smoke screen – and the screen that shows – the flat surface on which films appear.

Among the adjectives derived from screen, i.e., "screenable," "screenless," or "screenlike," one might ask whether the word "screenic" is worthy of consideration. Not only is it a quirky new word, but it has a special status, that of a coinage found in a theoretical context. Screenic is the translation of the French *écranique*, a term introduced by a group of researchers brought together by the Filmology project led by Étienne Souriau, as described in the book *L'univers filmique*.[6] The most substantial contribution of this book is the belief that we need a new vocabulary with which we can fully account for the various levels according to which the filmic universe can be defined; that is to say, the different aspects of reality that constitute a film in its relation with the outside world as much as in relation to itself. The best known terms coined by Souriau and his team are "profilmic" (the outside of the film as it is or as it can be shot) and "diegetic" (the characters, space, and time that constitute the special world of a given film).[7] It may be emphasized that, while initially defined separately, these terms are now system-

atically re-defined in relation to each other; for example, the actors are "profil-mic," while the characters are "diegetic."

In the same way, after being defined as all that appears positively on the screen, screenic is now differentiated from "filmographic," i.e., all that appears on the celluloid, and is associated with "filmophanic," i.e., all that occurs during the showing of the film.[8] This distinction draws our attention to the transformation of the filmic raw material during its processing by projection and, in addition and equally important, to the fact that what occurs on the screen is part of a more general phenomenon involving theater space and spectatorship. Along these lines, Souriau's analysis as well as that of his collaborators, among them Jean-Jacques Riniéri,[9] can be helpful in intensifying the conceptual density of the term *screenic* and subsequently of *screen*. As Edward Lowry points out: "Riniéri asserts that it is the viewer's appreciation of [...] reality which lends a sense of belief to what Souriau defined as the 'second degree screenic phenomena, that level which determines the plane of immediate signification, where the first apprehension of the filmic object consciousness takes place.'"[10]

Besides the broad sense according to which screen denotes the movie and its practice using synecdoche (the part for the whole), we may consider that, on the one hand, this word in its strictest sense means the material screen as a rectangular plane surface on which a ray of light distributes plastic elements (forms and colors) dynamically; on the other hand, it means the place where these elements come to be perceived and interpreted as more or less anthropomorphic or dynamic, analogical representations. The difference between these two points is an issue that has been discussed extensively since the 1960s, not only within the field of film studies but also in relation to the general topic of visual communication, including the whole range of visual arts. Can we consider visual representation from the viewpoint of the neutral first level of raw material, or must we agree on the idea of there being a gap that enables us to see beyond the raw material to the second level in order to grasp the special logic of a system of representation? There have been two ways of tackling this problem: some scholars have discussed whether the psycho-physiological bases and processes of image perception are different from those of natural perception, while others discussed whether the perspectivist system governing the visual representation as well as our perception has an ideological influence.

As a proof that times and atmospheres have changed, today these ways of dealing with screen seem to be less relevant than new studies on the subject, which are rapidly multiplying. Among these significant contributions are: Raphaël Lellouche's theory of screen (1997); Erkki Huhtamo's so-called screenology (2004); Lucas D. Introna and Fernando M. Ilharco's phenomenology of "screenness" (2006); Anne Friedberg's visual arts perspective (2006); and Valérie Charolles's philosophy of screen (2013).[11] These texts not only stand as testimony to the fact that the question raised by Francesco Casetti in 2013, "What is

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a screen nowadays?"[12] remains relevant, but it also exemplifies the need to diversify theoretical viewpoints. Moreover, while this broad question may lead to new answers and new intellectual viewpoints induced by new ways of questioning, it can also be challenged by emerging questions that deal with the new forms of screen. Given this situation, this book seeks to offer the reader a series of propositions that, from various perspectives, provide new insights into screenness and its various aspects: the screen could be considered to be material, mental or, more generally, a link between matter and mind. Our aim is also to preserve space for diverse approaches: historical, theoretical, or mixed.

The goal of the first part of the book is to offer a deeper understanding of the current multifarious forms and practices of screening, but it does not mean we necessarily concentrate on the present in order to lead to a kind of *tabula rasa* of the past. Indeed, the new ways of dealing with the screen that are referred to here include the historical approach and, as it is currently described, the archaeological approach. Archaeology in this sense is both the recovery of the past and a new way of considering and thinking about the past (inspired by Michel Foucault). Thus, the book begins with an early text by Emmanuele Toddi, a pseudonym of Pietro Silvio Rivetta (1886-1952), a journalist and illustrator, who, two years before venturing into filmmaking, wrote an essay entitled "Rectangle-Film [25x19]" ("Rettangolo-Film [25x19]"), which may grab our attention for two reasons. Published on August 25, 1918, in the third issue of the magazine *Penombra*, it appears to be one of, if not the first texts that deals with the possible shapes of the screen in movies. Moreover, emphasizing the large gap between the human eye and the "cinematographic eye," Toddi wonders whether the established rectangle shape of the 35mm photogram is a rational choice. Rejecting this hypothesis, he offers to change the shape and the size of the screen according to the psychological and dramatic needs of the viewer.

Opening with Toddi's text, the first part of the book presents a series of contributions to the history and archaeology of the cinema and the media. In Giorgio Avezzù's "Intersections between Showing and Concealment in the History of the Concept of Screen" and José Moure's "Archaic Paradigms of the Screen and Its Images," the main purpose is the construction of the concept of screen through its literary genealogy, from Plato to the beginning of movies. Avezzù's investigation revolves around the subdivision between "monstration" and "protection," which, as can be seen in the whole book, is a fundamental contribution to the definition of the concept of screen. Avezzù shows that the subdivision is less a contradiction than a complementary couple, a point he clarifies when exploring the issue in detail from an archaeological viewpoint. Also drawing on Plato, José Moure focuses on the various paradigms of the concept of screen as it existed before the word itself was even invented and before the emergence of the cinematograph. From the mythological screens to the screens of science fiction, he illustrates how the literary history of the screen is inseparable from the history of

image transportation, i.e., the artifice devices that show things as a shadow or a reflection outside of their place of origin.

As indicated by its title, "Thematizing the 'Arche-Screen' through Its Variations," Mauro Carbone's essay presents a meta-concept implementing the showing and hiding duality of the concept of screen, which he calls "arche-screen." Acting as its mythical origin, Plato's *teikhíon* performs this double function, which can be found throughout most of the history of screens, from rupestrian walls to computer screens, including veils and cinematographic ones. Over-determining the space of projection and reception, the "arche-screen" presents more than it shows, soliciting not only our perception but also our imagination and desire, as it is an efficient way to manage the sacred relationships. Part one concludes with Ian Christie's "The Stuff of Screens," in which he considers the point from which the screen moved to its definite status, focusing on its materiality as a condition of relationships between spectators and movies and the way filmic imagery works. Christie emphasizes the fact that adopting a unique kind of screen – for example, the translucent screen used temporarily in phantasmagoric spectacles – was both a technological choice and a cultural determination. It concerns not only the screen itself, but also the "framing" of the screen: the curtain; the loudspeakers; and the organization of space that CinemaScope and 3D require.

Part two focuses on recent technological changes affecting both the definition of screen and the different aspects of media practices. Ariel Rogers's essay entitled "Scaling Down: Cinerama on Blu-ray," examines the consequences of "the release on DVD and Blu-ray of the 1950s Cinerama films," a transfer that initially seemed impossible, but, despite the need for a special exhibition device, has become a realistic option. By examining this case, Rogers not only describes a significant part of recent media history but also draws our attention to the relationship between the movies and the screen; the interaction between the original format of the former and the kind of screen toward which they migrate. We stay close to this issue with the discussion of the 3D screen in Simon Lefebvre's "The Disappearance of the Surface." Lefebvre shows that this form of motion-picture screening involves more than the out-of-screen visual effects. Beyond the screen, 3D movies take over the space from which we are normally separated in 2D projection: the theater space. Because screenic framing and flatness disappear, spectatorial immersion causes a new kind of relationship to movies, all the more so given that the viewer wears glasses, a device that reinforces the impression of not just being face-to-face with the movie, but being part of it.

This kind of physical extension is also examined by Richard Bégin in "GoPro: Augmented Bodies, Somatic Images." Bégin considers this kind of embodied experience to be an effect that is not only observable on the screen but at the very source, produced by the special device of Go-Pro Cameras whose function is to

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record the filmer's presence. In this case, the camera is more than a prosthetic device of the body, it involves the body in filming and, more precisely, the movements of the body, so that Bégin speaks of "mobilography" to qualify a filmmaker's practice in which "the recording of mobility" participates. Go-Pro Cameras are not innovative per se, insofar as we find the ideal of "mobilography" in experimental and documentary movies, in Alain Cavalier's films, even in ones by the Lumières, but it increases the effect so much that it is as if the scenes on the screen were not only represented, but "literally embodied."

Just as microscopes and telescopes are different, the evolving screenic technology explosion is characterized by the co-existence of small as well as huge devices with the remaining median form and the measuring instrument of the old theater screen. At the smaller end of the scale is the wrist-mounted screen, which, according to Erkki Huhtamo in "The Four Practices? Challenges for an Archaeology of the Screen," is one of the most recent prosthesis that appears to have changed screen practice. Based on his concept of "screenology," a branch he proposes to add to the tree of media studies, his essay attempts to analyze some aspects of screen practices that can be considered new, insofar as the subject matter is viewed through the lens of archaeology. This way of thinking, as he shows, provides an opportunity to be both retrospective and future-oriented when considering the screen properties. Among screen practices, the interactive touching as well as the "mobile practice" – i.e., screen practices where the user is moving through either an immobile environment or a mobile one – are keen topics of discussion. In "Screens in the City," Nanna Verhoeff examines the case of "Urban Screens," which she defines as "mobile media architecture," and examines the interaction between urban spaces and urban screens. As part of the former, urban screens imply some significant changes in the urban *dispositif*. They introduce mobility; in fact, a new kind of mobility that dynamically changes the relationship with urban design and structure as it was previously established at the level of mobility and connectivity. On this basis, Nanna Verhoeff develops three key concepts – infrastructure, interface, and intervention – and analyzes some symptomatic examples in order to explain the way screens appear in the city.

The third part of this book is entitled "theory." This does not mean that the preceding texts were deprived of theoretical concerns. The essays in this section share the same specific knowledge as the previous contributions, but are more more explicitly aimed at image theory. In "The Screenic Image: Between Verticality and Horizontality, Viewing and Touching, Displaying and Playing," Wanda Strauven studies the practice of touching, which has been made possible by the introduction of interactive smartphones and computer screens. As her title announces, she studies the relation between the tactile use and the visual contact of the screen; the way screenic touching interacts with screenic seeing. Strauven explores what she calls "table installations," i.e., screens placed horizontally that

spectators watch vertically – for example, Thomas Hirschhorn's Touching Reality or Camille Henrot's Grosse fatigue. But the perspective is not limited to a descriptive task, insofar as Strauven also offers to rethink the concept of image in our present context. The question is to ascertain the extent to which touching creates a new kind of object, more or less changing the image definition; or whether the use of images changes in a context where children are familiarized with the tactile relationship to screens. Following up on what Strauven argues, Vivan Sobchack's "From Screen-Scape to Screen-Sphere: A Meditation *in Medias Res*" discusses screens in the context of 21st-century daily life. She claims that, nowadays, we live through screens, instead of with them, so that we are affected by them both knowingly and ontologically. While screens have developed the characteristics of ubiquity, interconnection, and mobility, they create a new environmental conditioning, "a 'virtual' spacetime," changing our life and causing some disorder. Sobchack considers this situation from two perspectives. The first one deals with the relationship between screens and the anthropocentric position in relation to them, including degrees of awareness – what she calls the "screen-sphere"; the second one is a systemic point of view, as an answer to the phenomenological and historical approach, leading to the question whether the screen is by itself an autonomous system, or whether interactivity becomes a property of this system, instead of upholding the man-machine relationship.

Roger Odin, in "The Concept of the Mental Screen: The Internalized Screen, the Dream Screen, and the Constructed Screen," defines the seminal concept of "mental screen" based upon the phenomenon of internalizing screen; for example, as it is defined in the physical communication space of the theater. When we think of the "cinema," we think of this kind of screen, as there may be a conflict between this mental screen when we migrate to another kind of screen. That is why the *dispositifs* are supplemented by devices, called discursive and pragmatic introducers, and also why experiencing cinema is determined by different kinds of relationships, called connectors, which are more or less rigid, inclusive, flexible, and open. Moreover, the process of internalization is reversible: we can imagine a mental screen that is more or less different from the standard one – for example, a screen we can hold in the palm of our hand and manipulate with the other hand – a dream that has been fulfilled thanks to the cell phone! In "Between Fascination and Denial: The Power of the Screen," Dominique Chateau focuses on fascination, a (modified) state of mind independent of the screen but considerably increased by the relationship with screens, regardless of differences in shape. He suggests ways in which to better grasp this phenomenon strongly linked to screenness, adopting a twofold viewpoint: a psychological one, insofar as fascination is a way of being affected by the world that causes a modified state of mind; and a cultural one, insofar as this phenomenon occurs thanks to an apparatus during different social practices. Considering the ambiva-

lent physicality of the screen as a medium aimed at transmitting energy – that is, light – the phenomenon of fascination can be studied as an iconic effect (in Peirce's sense) and, correlatively, as a denial of representation, which favors the realistic ideology.

Intermediality is a key concept introduced by historians having realized that traces of other media are to be found in movies. It is also reversible: traces of movies are to be found in other media. The challenge is now to consider the screen in literature. Part four opens with Salvador Rubio Marco's "Screens after Dos Passos's U.S.A. Trilogy: Current Answers for the Eyeminded Public," which explores two theoretical lines of reasoning: a genealogical one that leads to the debatable hypothesis of the abolition of the screen, and an intermedial one that suggests reviewing Dos Passos's visual-like narrative using a complex concept of screen. This way of questioning introduces an aesthetic viewpoint combined with a political one. As Rubio Marco puts it, "Dos Passos's approach of 'eyeminded people' may be useful in order to reconsider the "logocentrism" referred to by Screen Theory theorists." Considering plastic arts, such as painting, sculpture, or diverse assemblages, the confluence with cinema can be based upon two opposite ideas, depending on whether these media share some visual properties or not. El Lissitzky criticized the cinema because it reduces 3D to 2D, but, involving the intertwining of arts in his artistic work, including not only painting, print, and sculpture but also drama, architecture, and the cinema, he conceived a special exhibition room, called *Screening Room* or *Demonstration Room*, in 1926 and 1927 at Dresden and Hannover. In "El Lissitzky's Screening Rooms," Olivia Crough studies this very interesting case of intermediality that constitutes neither a picture of something inspired by movies, nor an introduction to screens and film projections, but a transformation of the architectural space as it appears in museums and exhibition spaces. Crough considers this a new standard of spatiality through the model of the screen, which is here seen more as a material screen than as a surface of dematerialized projections. In the context of contemporary art screening it is not only a possible model but also an intentional goal. We stay within the confines of the museum with Raymond Bellour's "But Who Actually Watched Mark Lewis's Films at the Louvre?," the title of which refers to the exhibition of four of Mark Lewis's Films (Pyramid, Child with a Spinning Top, The Night Gallery, In Search of the Blessed Ranieri), which were projected in a paradoxical place, a "non-place" if you will, in the sense of Pascal Augé.[13] Because instead of being exhibited in a enclosed space, the projection took place in a transitional place at the Louvre Museum, where people walked and talked on their way to other exhibitions. Just a few seats and a few people and, at the same time, an aesthetic experience adding transitional views – "like wisps of smoke driven by an automatic energy," Bellour writes – to the transitional place where they appear, an intense experience of perception by

which the eye and the attention are constantly challenged, producing both per-turbation and pleasure.

With the final part of the book, we enter a space for dialogue. Similarly, the essays are less focused on a unique problem, and more on a set of questions inspired by the shared interest of both interviewer and interviewee. The first dialogue is a conversation between Martine Beugnet and Annie van den Oever entitled "Gulliver Goes to the Movies: Screen Size, Scale, and Experiential Impact," in which they reflect on the recent changes in viewing experiences in an attempt to show that shifts in scale and technology could possibly have a disturbing experiential impact on viewers. The dialogue's title refers to Erkki Huhtamo's concept of the "Gulliverization" of the screen, i.e., the dimensional variations of frame and representation, from miniaturization to gigantism.[14] The human size provides a benchmark from which Lilliputian and giant devices and/or representations deviate, so that the question is both technological – considering, for example, the gap between the screens of smartphones and those of IMAX theaters – and aesthetical, insofar as it deals with *ostranenie*, the grotesque, the sublime, and similar values, but also with the distance and tactile issue. The haptic element, of course, immediately calls to mind the work by Laura U. Marks, the author of *The Skin of the Film*,[15] whom we were delighted to have join us in conversation. Based on close-readings of her books, the dialogue, "The Skin and the Screen," deals with the way the screen and the screening can be defined through the hypothesis of the skin, either literally (the film materiality) or metaphorically. We explore whether there is a difference between the skin of the screen and the skin of the film. Furthermore, we ask Marks how screen participates in the embodied experience of movies, and how the question of tactility can be considered from the viewpoint of the screen. These issues are also related to Frank Kessler's thinking. We approached him because we think that, as far as we know, his *dispositif* theory is one of the most in-depth research on the topic to date. In the dialogue "The Screen and the Concept of *Dispositif*," we ask whether the *dispositif* issue could be focused on the screen and screening. This question may be addressed using the definition of *dispositif*:[16] what is the role of the screen in the *dispositif*? It may also be treated through a discussion involving the different approaches of *dispositif* (Foucault, Baudry, Metz). Another and more precise angle broaches the distinction of *appareil de base* and *dispositif*, leading the discussion to a terminological debate. Refining the discourse step by step, Kessler is able to deepen the theory of screen effects in movies and television. This contribution, among the others, shows the richness of the question of the screen and, at the same time, that it is still open.

PART I

Archeology and History

Rectangle-Film [25x19] (1918)

Emmanuele Toddi [Pietro Silvio Rivetta]

I made an observation nearly as important as a discovery.[1] Which is: a blind person does not attend moving picture shows. Such is a highly important observation, since – to my knowledge – it has so far never been stated before. Yet, it should be the basic axiom for the technic and artistic evolution of cinematography.

Thomas Alva Edison, who was deaf, brought the gramophone to the highest level of perfection. A blind Thomas Alva Edison would have not been able to fit together even the most embryonic cinematographic device.

Hence, cinematography cannot set aside the organ of the visual sense: namely, the eye – and, more precisely, the human eye.

When, by means of a new scientific miracle, the blind will be able to see – and their vision will be mechanical – a contrast shall disappear, at least for them. That is, the one existing at present between the human eye and the cinematographic eye. All the movie enterprises agree in producing this contrast, and such an agreement feels miraculous in the quarrelsome film world – so much that it could even be possible to gather all the countless movie enterprises under a single name: RECTANGLE-FILM.

Despite the differences in their programs, their company names, their constitutive legal form, their capital – from the humblest Pygmy sums to the most dazzlingly Rotschildian ones – as for their commercial and artistic means, all enterprises agree on the photogram's format: the rectangle. Thus, even when there was no war yet, no parties' agreement, no unified bread, there was already a unified format: 25 x 19.

Still, no pupil – not even in the filmic world – was ever rectangular: none is 25 x 19 nor of any dimensions proportional to these. All eyes, along the whole chromatic spectrum, from the palest – like those of Diana Karenne – to the darkest – like Francesca Bertini's – have a round vision, and round alone.

This geometrical difference is quite serious for an instrument that shall be rigidly considered as an agent of the eye. The objective goes where the spectator's gaze cannot directly go. Therefore, just like the agent that was characterized – in the volumes of a dusty university memory – as the *longa manus* of the principal, the cinematograph can be understood as the *longus oculus* of the spectator.

The constructor of the first "film camera" kept this well in mind, since he tried to repeat, with a more rigid material, what the Creator *par excellence* had done in Eden, when making the very first pair of eyes for our late Father Adam.

Hence, he shaped in real crystal a perfect imitation of the "crystalline lens" to be his objective, and made his diaphragm by carefully molding the "iris" in metal, so as to reproduce the variable opening width of an actual "pupil."

As for the "retina," things were pretty complicated: the aforementioned Adam had been provided by his Creator with enough "negative film" to keep him and his descendants safe from all worries concerning any possible celluloid crisis. It is pointless to think of an imitation of the previous kind, for, while the continuous development and renewal of the "negative film" is providential as far as the human eye is concerned, its benefits are such for the eye's owner only, and are way distant from any commercial possibility. After putting down some animals, the last images they had seen were observed on their retina. However, the cruel scientists that proceeded to such an experience did not come up with anything very significant apropos of this interesting phenomenon's role in vision.

Indeed, no other way was left than substituting an always renewing retina with a fixed retina: there came the film – along with all the, by now, too well-known concerns.

Once the eye had been adequately imitated in the film camera, a heterogeneous element was suddenly introduced: namely, the rectangular shaping of the photogram of 25 x 19 mm. In the human eye everything is set according to a curve line, and everybody knows by experience that nothing is as annoying as a foreign body in the eye.

Practical needs?

Of course. Yet, are they as draconian as that?

No matter on what market, the film we find – when we find it – is always 35 millimeters wide. The holes, which are indispensable for the gear, use up their own space: exactly one centimeter – hence, only a width of 25 millimeters remains to be used. Alright. Additional practical needs (photogram, turning, meshing, alternate obscuration) also impose the maximum height for each shot: 19 millimeters.

Alright again: it is pythagorically elementary for all film operators that the maximum usable space for each photogram, due to technical reasons, cannot be but 25 x 19.

It is impossible to overcome one of these two dimensions, even by a single millimeter, unless one means to radically transform all film cameras, all development, printing, and projection machines, as well as the cinematographic screens themselves. This latter measure would have some...hygienic benefits, but all the others would be so serious that the censorship would be the first to oppose to a propaganda so Bolshevistically-harmful for the national industry.

In fact, it would not be worth the effort. Actually, the *ukase* draconically forbidding – for technical reasons – to spill over the rigidly established rectangle does not impose to use the whole of it.

Monsieur della Casa and a laundress's economy suggest not putting more food on our plates than can be contained in its circumference. Yet, this does not mean we have to completely fill it, and the bit of the dish to be filled will vary... according to the kind of food.

Generally, among the scenes of a film there is more variety than among the courses in a menu, especially in war time. It is not good manners, then, to oblige the spectator to have an equal amount of each course: 25 x 19, again and again.

This ends up being boring, especially since such a format is – as shown above in our physio-filmic demonstration – absolutely irrational. Even a circular projection would bore – although the circle, as well as being the perfect geometrical form, is the natural form of the visual field.

The gaze embraces whatever is included in a cone whose center is what the physiologists call "the center of the eye" and whose directrix is the pupil. During a cinematographic show, this visual field is mutilated in a rectangular pyramid, many rectangular pyramids even – as many as the frames of the projected film – and each pyramid is equal, equal, equal to the others (25 x 19).

Even in the remote times of far Egypt less pyramids were built: only eighty are left. Still, we usually admire only three of these, and each is different in size. Sometimes a peculiar light effect providentially intervenes, eliminating a broad part of the photogram. Some American Company has recently found a rather smart trick, which may be called a "mobile diaphragm." It is an external "mask" with smoky edges whose diameter can be adjusted, and which can localize the vision in a single part of the canvas.

What about the rest of it? Of course, this remains black.

Besides, is the rest of the hall not black? And is the color *we do not see* that important, after all? What is the color, right now, of what is behind you? It is colorless, and the absence of all colors is indeed black.

This limitation of the visual field also has a physiological explanation: we "look straight" at an object, which is why it is the only one that is perfectly focused and perfectly seen. Even a close object can disappear, no matter if it is included in the visual field.

Here is a schematic experience: close your left eye, keep your right eye focused on point A, and then gradually move it away from the sheet; at a certain distance point B disappears, although a blurry vision of the whole page *In Penombra* persists. Physiologists explain this with the "blind spot" in which the optic nerve gets into the eyeball, they quote Mariotte and some of his colleagues – yet this has little relevance. Also, in reality, there are some areas of our visual field that we do not find optically interesting.

The cinematograph – *longus oculus* – definitely has to consider this.

Indeed, it has to consider all the bizarre geometry of the eye. The visual field is round, yet movable: in its movements, it describes weird geometrical shapes, which are not always modeled according to Euclid's diagrams.

For a gaze following a car driving on a winding road, only the road itself and the close surroundings exist: all the rest is negative. Is it worthwhile to distract even a fraction of that attention – which is also aesthetic – only to spread it on a fixed 25 x 19 panorama rectangle?

In a film, the good shaping of a frame can reveal a *metteur en scène*'s attitude as a fine psychologist. The perimeter he outlines for a certain scene can already be an interpretation in this sense.

Each regular geometrical shape has its own features, and hence a signification of its own. Maybe there is a close connection between psychology and geometry. Maybe, by means of theorems and axioms (axioms rather than theorems) one could demonstrate that to each and every state of mind corresponds a particular geometrical shape: joy is quite polygonal, wonder is round, envy is isosceles...

Who knows what corresponds to the rectangle – maybe only laziness: a base larger than its height.

Besides psycho-geometry, indeed the rectangle is not the most agile of framings, at least in the position it occupies within the photogram. On the contrary, an erected rectangle can sometimes frame a scene pretty well. In fact, it seems to me the only possible shape for framing the view of a staircase, of a thin tower, of a flame, or of a feminine slenderness... To cage the eye between the rigid 25 x 19 squares is hence a crime against aesthetics, against logics, against physiology.

A machine – a despotic machine – draconically delimits boundaries: if smuggling is not possible, then why not try to provide at least the illusion – after all, the eye is the easiest organ to be deceived – that such an imprisonment does not exist.

All one has to do is to avoid getting to the four border signs.

One may just freely – and most of all aesthetically – camp on the left or the right, on the top or at the bottom, and even *express* one's self by means of the various framed polygons.

There are frames for which the screen is a melancholic Saharan vastness, while for others it is narrow: the former mean to be held by a little intimate frame, while the latter would want to project themselves beyond the walls of the hall, or to descend down to the spectator's feet.

They would have to stop, when bumping into the orchestra.

Translated by Marta Nijhuis

Intersections between Showing and Concealment in the History of the Concept of Screen

Giorgio Avezzù

The genealogical reconstructions of the word and concept of screen in media archaeology have often stressed that "surface for presenting images" is a relatively late meaning that came into use in the first half of the 19th century, associated with the spread of pre-cinema devices such as the phantasmagoria and magic lantern. The original meaning instead referred primarily to concepts of concealment and protection.[1] I believe, however, that another, broader – and hence inevitably unsystematic, incomplete, and simplifying – exploration of the concept of screen is required, to establish that it embodies two coexisting meanings: an instrument of "protection" or "concealment," on the one hand, and of "showing" or "monstration," on the other.[2] Some episodes in the history of this concept, which we shall discuss, show how we should not be too hasty in jumping to the conclusion that the 19th century was a crucial time of discontinuity, of breaking with the past, a "point of diffraction" between two incompatible meanings (to use Foucault's terminology).[3] The aim is not merely to court controversy but to make a profitable contribution to an archaeology of the screen that demonstrates the intimate relationship between the two orders of meaning. This relationship may even seem obvious sometimes but problematic and theoretically fertile at others. Perhaps it lays the foundations for the concept itself: the screen probably needs to be considered *not as an object but as a function*, or rather as a *combination* of functions.

As If on a Screen, the Usual Illusion: Montale

A well-known poem by one of Italy's greatest 20th-century poets can provide a starting point. "Maybe One Morning, Walking in Dry, Glassy Air," from 1923, appears in Eugenio Montale's first collection, *Cuttlefish Bones* (*Ossi di seppia*).

Forse un mattino andando in un'aria di vetro,	Maybe one morning, walking in dry, glassy air,
arida, rivolgendomi, vedrò compirsi il miracolo:	I'll turn, and see the miracle occur:
il nulla alle mie spalle, il vuoto dietro	nothing at my back, the void
di me, con un terrore di ubriaco.	behind me, with a drunkard's terror.

Poi come s'uno schermo, s'accamperanno di gitto	Then, as if on a screen, trees houses hills
alberi case colli per l'inganno consueto.	will suddenly collect for the usual illusion.
Ma sarà troppo tardi; ed io me n'andrò zitto	But it will be too late: and I'll walk on silent
tra gli uomini che non si voltano, col mio segreto.	among the men who don't look back, with my secret.[4]

Italo Calvino noted how this poem "clearly belongs to the cinema age": the word "screen" (*schermo*) is used metaphorically, with a meaning that originates in cinema. This meaning, Calvino continues, differs from the Italian poetic tradition we are accustomed to; it has always used the word "in the sense of 'a shelter which obscures vision' or 'diaphragm.'" Indeed, he ventures, with an observation that seems to be echoed in those of Huhtamo, Elsaesser, and Hagener on how the term's meaning has evolved, probably "this is the first time that an Italian poet uses *schermo* in the sense of 'surface on which images are projected.'"[5]

Before reflecting on the poetic tradition to which Calvino refers, it may be useful to consider whether something of the original meaning of concealment persists even in this seemingly different usage. Things will assemble "as if on a screen," but effectively to create the "usual illusion": to conceal the "nothing" behind us, whose revelation – despite the screen, before its interposition – represents a "miracle." Interestingly, the Italian term *accampare* – to stand out against a background, as the figures are placed in a field of vision – probably derives from heraldry: the *campo* (field) is the background of the shield;[6] we shall talk of shields later. The miracle (the word's etymology is naturally linked to the sense of sight), the revealing of what lies beyond the screen (beyond the shield), is a central theme in Montale's poetry. It is "the prodigy that reveals divine Indifference," frequently invoked in *Cuttlefish Bones*, a book in which walls often recur. It is, in other words, what allows things to "betray their final secret," which precisely concerns an imperfection, a crack, a break, a split in a *dispositif* placed to separate and divide – the "flaw in the net," the "half-shut gate."[7]

Another poem, "The Hope of Even Seeing You Again" (1937), a motet in Montale's subsequent collection (*The Occasions/Le occasioni*), where the term "screen" appears again, may help to clarify the poet's use of the word:

La speranza di pure rivederti	The hope of even seeing you again
m'abbandonava;	was leaving me;
e mi chiesi se questo che mi chiude	and I asked myself if this which closes off
ogni senso di te, schermo d'immagini,	all sense of you from me, this screen of images,
ha i segni della morte o dal passato	is marked by death, or if, out of the past,
è in esso, ma distorto e fatto labile,	but deformed and diminished, it entails
un *tuo* barbaglio [...].	some flash *of yours* [...].[8]

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Here, too, not only is the screen a *screen of images*, but it actually has the effect of preventing awareness or at least of conveying a distorted, distant sense.[9] We should not really be surprised if Montale's use of the word "screen," read in a cinematic sense, has a "negative" connotation and thus remains tied to an older usage tradition. Indeed, it depends on the particular consideration that the poet had for the cinema. Although he contributed to the issue of *Solaria* dedicated to cinema (1927), in which various Italian intellectuals pronounced their faith in and openness to the "new" medium, Montale used it as an early opportunity to distance himself from the impassioned "effusions" voiced by many French commentators.[10] Later, his view would become radical: "I would abolish cinema";[11] "cinema is an inevitable source of prostitution and delinquency."[12] He considered it devoid of artistic foundations, an art of imitation and mimicry that effects an "actual substitution of objects [and] effectively mutilates our way of seeing."[13] Moreover, it is "art for the masses," and as such it could not meet the approval of a poet of intimately elitist character: "True art today […] is more than ever the art of the few for the few."[14] Unsurprisingly, Montale proved a less than felicitous choice as president of the jury at the 1953 Venice Film Festival: that year, for the first time, no Golden Lion was awarded, despite entries from Mizoguchi and Fellini, among others.

When Montale mentions screens of images, things that organize and array themselves "as if on a screen," I do not take that as a completely revolutionary departure from the term's meaning in the Italian poetic tradition. The screen certainly serves to represent and show – thus, it evokes the cinema epoch, as Calvino noticed – but also to hide, to deceive, to separate, to create distance, although it is not always successful, and the "plan" that it should contribute to shape may be miraculously subverted, consequently creating a sense of astonishment.

The Screen Ladies and Our Simulations: Dante

At this point, a deeper examination is required precisely of that Italian "poetic tradition" to which Calvino alludes regarding the more typical sense of the term "screen." Many exponents could be cited, but the most immediate are Petrarch and especially, even earlier, Dante, to whom we shall now look. Incidentally, it should be noted that these instances narrowly precede what the Oxford English Dictionary documents as the first use of the Old French *escran*, meaning simply a fire screen.[15]

In the *Commedia* and elsewhere, Dante employs the term in its broader sense. Battaglia's *Grande dizionario della lingua italiana* defines *schermo* as "that which is used to cover or shelter someone or something from external agents, inclement weather, or harmful factors, to hide it from view: cover, shelter," and also, figuratively, as "that which is used to combat or avoid a negative circumstance, a

difficult, damaging or unpleasant situation." In fact, the very use of the word in reference to a context of seeing (the screen as protection from the gaze) seems metaphorical and less intuitive to me.

Dante also deploys the term in this figurative sense, with a visual meaning regarding combating an unpleasant situation. He does so in *Vita Nova* (1293-1295), where a few passages of special interest from a *dispositif*-archaeology perspective (and for a history of screen practice) tell of the *screen lady* or *donna schermo* – "nothing less than a theme" of the work, according to Gianfranco Contini.[16] As the rules of courtly love demanded, the beloved woman's identity must remain secret. Therefore, it needs to be concealed from the audience, either by changing her name (as with the *senhal* in troubadour poetry) or, as with Dante's screen lady, by pretending that the love was directed towards another woman, in other words by using another woman as a screen for the love towards the actual beloved.[17] Chapter V of *Vita Nova* describes an actual visual *dispositif*, a spectacular construction evoked in detail, an observer and an observed, straight lines of sight, an audience and a (living) screen:

> Un giorno avvenne che questa gentilissima sedea in parte ove s'udiano parole de la regina de la gloria, ed io era in quel luogo dal quale vedea la mia beatitudine: e nel mezzo di lei e di me per la retta linea sedea una gentile donna di molto piacevole aspetto, la quale mi mirava spesse volte, maravigliandosi del mio sguardare, che parea che sopra lei terminasse. Onde molti s'accorsero de lo suo mirare; e in tanto vi fue posto mente, che, partendomi da questo luogo, mi sentio dicere appresso di me: "Vedi come cotale donna distrugge la persona di costui"; e nominandola, io intesi che dicea di colei che mezzo era stata ne la linea retta che movea da la gentilissima Beatrice e terminava ne li occhi miei. Allora mi confortai molto, assicurandomi che lo mio secreto non era comunicato lo giorno altrui per mia vista. E mantenente pensai di fare di questa gentile donna schermo de la veritate; e tanto ne mostrai in poco di tempo, che lo mio secreto fue creduto sapere da le più persone che di me ragionavano. Con questa donna mi celai alquanti anni e mesi [...].

> It happened one day that this most gracious of women was sitting in a place where words about the Queen of Glory were being listened to [i.e., a church], and I was positioned in such a way that I saw my beatitude. And in the middle of a direct line between her and me was seated a gracious and very attractive woman who kept looking at me wondering about my gaze, which seemed to rest on her. Many people were aware of her looking, and so much attention was being paid to it that, as I was leaving the place, I heard people saying, "Look at the state he is in over that woman." And hearing her name I understood they were talking about the woman who had been situated midpoint in the straight line that proceeded from the most gracious lady, Beatrice, and

reached its end in my eyes. Then I felt relieved, confident my secret had not been betrayed that day by my appearance. And immediately I thought of using the gracious woman as a screen for the truth, and I made such a show over it in a short amount of time that most people who talked about me thought they knew my secret. I concealed myself by means of this woman for a number of years and months [...].[18]

The screen of truth "for this great love of mine" is what the majority must see, to prevent them from contemplating what Dante is really interested in (and marvels at) – Beatrice – and to make them believe that they know something that actually remains secret. It is a defensive, protective, concealing screen, but also a screen of representation, of monstration: "*tanto ne mostrai*," writes Dante – "I made such a show over it." In Dante's spectacular geometry, which uses the terms of medieval geometrical optics,[19] the screen lady is literally the midpoint, the median, the medium: "*colei che mezzo era stata*" – (lit.: she who medium had been). She is an interface, what is seen instead of what must stay hidden to avoid ruin. She is what the audience (the "many") see, for sure, but she is also Dante's means of setting the beloved woman apart, to symbolize her own unattainability. This unattainability is certainly typical of courtly love – a love unfulfilled, by definition, a sensual but disembodied fascination – but in the *Vita Nova*, it acquires nuances that are more markedly supernatural. Indeed, Beatrice is a "miracle" (and able to perform miracles); understandably, a means of mediation, a ritual geometry, is required to experience her, or rather to keep her sacred. For this reason, Dante "makes a virtue of the encounter's impossibility."[20]

The screen lady is a device primarily of protection and segregation but also of illusory, deceptive representation. As emerges in chapter X (1), Beatrice refused to acknowledge Dante because there were too many "indiscreet" rumors "*oltre li termini de la cortesia*" (lit.: beyond the terms of courtesy) about his relationship with the screen lady. The latter is a second screen lady to whom the poet had newly addressed his "*simulato amore*" (lit.: simulated love) to "*mostrar[lo] ad altri*" (show [it] to others) after the first one left Florence.[21] Beatrice's coldness could not but cast Dante into the deepest despair. In chapter XII, Love thus appears to him in the guise of a young man clad in white, who advises him to finally declare the object of his love, ordering him in Latin: "*Fili mi, tempus est ut pretermictantur simulacra nostra*" – "My son, it is time for our false images [our simulations] to be put aside."[22] The *simulacra nostra*, our simulations, the false images,[23] are actually the screen ladies, or rather what the author wishes the public to believe through them.

We see how the screen, here too, is linked to a function of monstration, of exhibiting (false) images, albeit in a particular metaphorical sense and certainly with a meaning strictly bound to the main definition of a means of protection. As we have said, Dante himself will use "screens" in the *Commedia* in a more con-

crete and material sense – screens are, for example, the defenses constructed by the Paduans along the River Brenta and by the Flemish at Wissant and Bruges to resist the sea.[24] Yet, on closer reflection, perhaps it is precisely the metaphorical sense, and especially the strand of the metaphor linked to the sense of sight, which – as we have seen – is absolutely central in *Vita Nova*, that enables the two functions of protection and representation to be superposed. In early Dante, the screen as a visual metaphor is already that which conceals and yet shows.

A Shield, Wondrous to Behold: The Shield of Achilles

One of the word's most evocative etymologies associates the screen with the "shield," which shows "how the military pervades – not only technologically but also etymologically – on many different levels of our media history," according to Wanda Strauven.[25] As we see, reading between the lines at least, Strauven is primarily interested in the reference to a military shield as an object made of animal hide, from the media-archaeology viewpoint that considers not only the devices' visual aspect but also their haptic, tactile aspect (besides, naturally, their portability). But should we necessarily ascribe no visual and representative importance to the screen-shield, an instrument of protection and defense *par excellence*, the most concrete expression of the function of a screen?

The most celebrated shield in classical antiquity – the one that Hephaestus forged for Achilles at his mother Thetis's request, after Patroclus had died and the arms that the hero had lent him had fallen into Trojan hands – shows we would be quite wrong to ignore the visual significance of the screen-shield. The shield of Achilles is certainly a formidable (albeit ultimately inadequate) instrument of defense, but it is also a surface of representation. The correlation between these two functions already exists in Homer: Hephaestus, he says, can only wish to be as sure that his shield can protect Achilles as he is sure that it will be beautiful to see.[26] "Across its vast expanse with all his craft and cunning, the god creates a world of gorgeous immortal work"[27] – the 130 verses of book 18 of the *Iliad* (478-608) describe it in full, minute detail. The land, the sky, the sea, the sun, the moon, the constellations, a city in peace with its rituals, a wedding, a banquet, a legal dispute, a city at war besieged by two armies, an ambush scene, agricultural and pastoral scenes (the seasons), ploughing, harvesting crops and grapes, cows attacked by lions, a valley with grazing sheep, music and dancing are shown, all belted by the River Oceanus.

The scenes mostly give an impression of movement and sound. Referring precisely to the succession of scenes and their narrative style, as stories, Umberto Eco comments in *The Infinity of Lists* that it is "as if the shield were a cinema screen."[28] But, in effect, the shield of Achilles is a screen simply because it is a picture, a tableau, a frame, a *dispositif* that delimits space, a textual field and a field of representation. The lengthy description is the archetype and model of

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every literary *ekphrasis*, a pause with clearly defined limits in the Iliad story. On one hand, it imitates or even vies with its referent, the object, the shield: it is a medallion, a verbal equivalent of a visible object. On the other, it is a miniature replica of the entire poem, inside it (i.e., a *mise en abyme*);[29] hence, it is an enunciative and metadiscursive configuration, a "secondary screen" or a screen within another screen, in Christian Metz's terms.[30] On a still higher level, the shield is a device that serves to shape, frame, and organize the whole world: Oceanus surrounds it, as it frames the Earth itself and the maps of the *oecumene*. Incidentally, it might be worth remembering that the Ptolemaic instructions for the planar projection of the oecumene, surrounded by Oceanus, underlie the Renaissance rediscovery of perspective, which is what classic apparatus theory saw in turn as the root of cinematic framing.[31] The shield of Achilles is almost a mnemonic device, a theater of the world, a screen of images, an *imago mundi* – shield and *imago* together – an image of the entire Earth, a representative utopia, a synthesis of the whole world.[32] And it is precisely from its imitative character as a "*mimema* of the cosmos" and from the great realism of its images that the shield's wonder and amazement derives: "that any man in the world of men will marvel at / through all the years to come – whoever sees its splendor"; "*hoia tis aute / anthropon poleon thaumassetai, hos ken idetai*" – where *thaumassetai* comes from *thauma*, "wonder," "amazement."[33]

The Part That Lies Opposite, and Plato's Wall

Of course, with the shield of Achilles, we are actually talking about a shield (*sakos*), not a screen. The terms are different. The etymology that Strauven indicates, in fact, involves the Old High German *skirm*/*skerm*, not the Greek.[34] Besides, it would be pointless to seek such a distant testimony of a word equivalent to "screen" in today's sense(s). Thus, it might be more rational, if anything, to consider functions first, before terminology. Indeed, it is curious to think that, in the cave allegory in Book 7 of Plato's *The Republic*, famously discussed by Jean-Louis Baudry in relation to the cinematic apparatus,[35] the term "screen" is never used, nor (on closer inspection) is an equivalent, in the now current sense. For all the translations speak of the "wall" (*parete*, in Italian) of the cave on which the shadows are projected, although the Greek text does not even use an actual noun, preferring a pronoun followed by a partitive and an adverb of place – the shadows are projected by the fire "towards that [part] of the cave that lies opposite the [prisoners]" (*eis to katantikru auton tou spelaiou*).[36] There is no term to indicate the projection surface, and Plato is forced into circumlocution.

Nevertheless, those same lines of Plato's text contain a reference to a screen – a different screen – one that conceals the bearers of simulacra, the "puppeteers," from the prisoners. Or rather, the wall (*teichion*) built to divide the space occupied by the audience from that of the "projectionists," if you will, is akin, Plato says,

to those "screens" that the puppeteers place between themselves and the onlookers and over which they move the marionettes. "Screens" is often employed in the English translations and sometimes in the Italian ones – *schermi*. It accurately renders *paraphragmata*; other translations use "partitions" or "parapets."[37] In one instance, "puppeteers," *thaumatopoioi*, has been translated, perhaps more accurately, as "masters of the show."[38] The term is based on *thaumata*, often translated as "puppets," even though the Greek word faithfully describes the *effect* – it is the plural of *thauma*, "wonder," a word that we met earlier – rather than the *means*. As to the *thaumatopoioi*, they are not those who produce (-*poioi*) the marionettes but, of course, those who create the show and its wonders.

Plato's description, however, also contains a certain paradoxical element; unlike what the audience of a marionette performance would do, here the prisoners watch the *thaumata*'s shadows, looking in the opposite direction from the wall-screen. But it matters little. The screen is still used to protect the images' credibility by hiding the mechanics of the show from view: their shadows in the projection, as Baudry notes in his commentary on Plato, must not be *conflated* (associated) with those that comprise the actual (deceptive) show.[39] For, here too, not only before the projection but also during and because of it, the screen serves to define and distinguish a stage and a backstage, an in-frame and an out-of-frame area.

The Film Screen Is Athena's Polished Shield: Medusa

Returning to the screen-shield, we can discuss another example from the classics that is as famous as that of Achilles: the shield of Athena. Perseus used it to vanquish Medusa, whose gaze could not be met directly but only via an instrument of mediation, a medium. According to some traditions, that event also took place in a cave. Perseus uses the shield not only to protect his sight but also to obtain a reflected representation enabling him to see (and thus defeat) what he could not otherwise have tackled.

Athena's shield brings us back to a terrain that cinema theory has already explored. Teresa de Lauretis has offered a feminist reading: "some of us do know how Medusa felt, because we have seen it at the movies, from Psycho to Blow Out [...]."[40] Frankly, I find it unconvincing, as it seems rather uninteresting to conjecture how the Gorgon might have felt and decidedly reductive to make a comparison with Marion Crane in Psycho: Medusa is not a woman, because the otherness that she represents, as Jean-Pierre Vernant says, is more radical, terrifying, monstrous, and unsustainable. Rather, it is what precedes every (definition of) form, every limit: "The usual conventions and typical classifications are syncopated and intermixed. Masculine and feminine, young and old, beautiful and ugly, human and animal, celestial and infernal, upper and lower [...]."[41] It is the embodiment of a rehashing and a total confusion that "no

words can describe"[42] – perhaps like Montale's "nothing," which produces a drunkard's terror and which, rather than a referent, a "nothing" that actually exists, probably indicates the very impossibility of naming something that cannot be spoken because it pre-exists names. Medusa represents a "formless magma" that precedes the introduction of order and number (and gender); Perseus's shield, however, stands for the rationalization and visual domination of this magma. It is no coincidence that Medusa and the other two Gorgons are *beyond* the Oceanus, outside the confines of the world, out of frame.

The most celebrated and persuasive appeal to the myth of Perseus in cinema theory is, of course, Siegfried Kracauer's in the conclusion of *Theory of Film*. "The film screen is Athena's polished shield," "the myth suggests that the images on the shield or screen are a means to an end; they are to enable – or, by extension, induce – the spectator to behead the horror they mirror"; hence, "Perseus' greatest achievement was not to cut off Medusa's head but to overcome his fears and look at its reflection in the shield."[43]

The response to the page and a half that Kracauer dedicates to "The Head of Medusa" – e.g., from Georges Didi-Huberman at the end of *Images in Spite of All* and Miriam Hansen in *Cinema and Experience*, who discusses, among other things, an "anamorphic deformation" of the shield that cannot be traced in the text[44] – has confined Kracauer's argument to literally horrendous and terrifying images only, such as those of Le sang des bêtes (Georges Franju, 1949) and the films shot in Nazi concentration camps. To be sure, those (plus the war films) are what those pages are explicitly referring to. But, in my view, the Athena's shield metaphor must be considered in a broader sense, as a distillation of Kracauer's *entire* theory of film, a theory of *photogénie*, i.e., strictly speaking a theory of the difference between ordinary experience of the world and mediated experience, and of the latter's qualities. (That, fundamentally, is the nub of the difference between the classic theories of realism, Kracauer's and Bazin's.) The passage on Medusa's head can be considered in parallel to the well-known extract from Proust cited towards the beginning of the volume as emblematic of "the photographic approach." It recounts the narrator's entrance, unannounced, into his grandmother's lounge, when he sees her, as if in a photograph, in a situation cleansed of any impediment to an "objective" view: "We never see the people who are dear to us save in the animated system, the perpetual motion of our incessant love for them, which before allowing the images that their faces present to reach us catches them in its vortex, flings them back upon the idea that we have always had of them, makes them adhere to it, coincide with it."[45]

Ultimately, this whirlwind that "captivates" and "blinds" is akin to that paralyzing "returned" one-to-one gaze between Medusa and anyone who looks at her directly. The photographic approach, instead, entails a detachment, an estrangement, the breaking of a bond, a medium that acts as a shield from the giddying whirl of emotions and that interposes itself to afford a better view, making things

"an end in themselves," where their meaning is not based on the subject's personal experience. Even if we speak in one case of "love" and in the other, reflecting the Medusa legend's meaning, of "horror," the relationships' geometry (their entanglement) is similar, like the need for something to interpose itself, to interrupt and channel the field lines.

Revealing by Concealing: The Iconostasis

The photogenic economy of gaze proposed by Kracauer implies the need for a mediation tool to enable the subject to truly grasp reality, a shield for the involuntary "emotional" overinvestments that this would automatically trigger if watched or experienced directly. In this revelationist inspiration, perhaps Kracauer evinces an "aura of eschatological longing": consider the last words of the preface, "the trembling upper world in the dirty puddle."[46]

Indeed, religion offers another eloquent example of how the functions of concealing and revealing – specifically in the visual sense that interests us – can or rather must interweave dialectically. Take the case of the iconostasis in eastern Christian churches and its theological significance. It is a barrier, a gateway, but also a place for exhibiting images, as the word itself shows. Its evolution from a low marble parapet to a screen for icons occurred after the iconoclastic period ended,[47] and the iconostasis's full affirmation dates back to the 14th and 15th centuries. Its purpose is to separate a space visible to the congregation, that of the narthex and naves, from a space that must remain invisible and hidden, namely the sanctuary, which is accessible to the priests only. But the sacred space's topography, or perhaps its geography, is obviously symbolic. As is well known, the church's space is literally an oriented space, a metaphor for the visible and invisible worlds, a map of both worlds; the Byzantine church's screened sanctuary, as has often been noted, alludes to the inaccessibility of the supersensory mysteries. As the holy space of the sanctuary is set apart, out of sight, the essence of the divine is unattainable and thus unrepresentable, as Nicholas Constas observes. Nonetheless, it can be known *via mediation*, which is exactly what the iconostasis is for.[48] The religious experience occurs through the symbolic mediation of the icons on the iconostasis, on the threshold of the sacred space. In the Byzantine tradition, these icons participate almost in an indexical sense of their referents' divinity. When discussing the icons' semiotic nature, Florensky spoke precisely of the ontological connection between the images and the archetypes.[49]

The oldest and most cited ideas about the iconostasis's theological function are by Symeon of Thessalonica. The sanctuary barrier (*diastula*), the visible threshold of the invisible, is a kind of firmament (*stereoma*: the vault or *solid* arch of the heavens) that separates the perceptible from the intelligible, he wrote. Centuries later, Florensky said something very similar; the iconostasis is the ar-

chitectural materialization of a theory of knowledge, a knowledge that occurs specifically because of and *through* the screen of icons:

> But this material prop, this material iconostasis, does not conceal from the believers some sharp mystery (as someone in ignorant self-absorption might imagine); on the contrary, the iconostasis points out to the half-blind the Mysteries of the altar, opens for them an entrance into a world closed to them by their own stuckness [...]. Destroy the material iconostasis and the altar itself will, as such, wholly vanish from our consciousness as if covered over by an essentially impenetrable wall. But the material iconostasis does not, in itself, take the place of the living witnesses, existing *instead* of them; rather, it points *toward them*, concentrating the attention of those who pray upon them [...]. To destroy icons thus means to block up the windows.[50]

The iconostasis's function, then, is paradoxical, oxymoronic – that of a "mediated immediacy," of revealing through concealing, unveiling by veiling. It works as a screen, in both senses of the term at once.

Referring to the icons' screens, therefore, "these symbolic 'veils' are not said to obstruct 'communion and comprehension' of divine mysteries, but instead function precisely as the irreducible medium of religious experience, a network of figures, as it were, providing the conditions for perceiving that which is beyond figuration."[51] Constas speaks of veils and curtains in a literal and material sense, too: they can be placed on the iconostasis and, moreover, are metaphorically linked to divine illumination and light, which from a cinema standpoint have particular evocative power: the veiling is a condition of illumination, the latter is subordinate to it.

An analogy between the cinema screen and the iconostasis has, in fact, already been offered by Gian Piero Brunetta:

> Before the invention of cinema, the screen on which the magic lantern's light was projected was a mirror of the visible, at once an element separating and joining the visible and the invisible. In seeking to enhance their symbolic dimension, the screen or simple wall, even, have assumed an absolutely identical spiritual function to the iconostasis, as described by Pavel Florensky in his remarkable essay [...].[52]

Similarly, in an article that Montale apparently referenced for his piece in the cinema edition of *Solaria* in 1927, Antonello Gerbi drew a broader (and semi-serious) parallel between the cinema screen and the altarpiece.[53] Also in 1927, for that matter, Abel Gance presented his "triptych" on Napoléon.[54] The analogy with altarpieces and polyptychs, however, evokes quite a different artistic and liturgical tradition, one that earns Florensky's scorn, because it does not afford

the same ontological dignity to the images – although the altarpiece, like the iconostasis, is still a *retabulum*, a *gran machina*, a spectacular *dispositif* for focusing visual and spiritual attention.[55]

Iconostases are screens of images that serve not only to separate, prosaically to add order to a space, to keep the large congregation at a distance,[56] but also to allude to the distinction between two worlds and to the permeability between them, which depends on the particular way of directing gaze and attention that the screen itself constructs. It is clearly not a theory of *photogénie* – and the "ontological connection" of the icons with their archetypes discussed by Florensky certainly cannot be perfectly superimposed on Kracauer's ontological realism – but it is nonetheless a celebration of the power of mediated vision, of the ability of a screen of images to reveal by concealing.

A Combination of Functions and Their Permutations

The episodes that I have discussed are not intended as cornerstones of a history of the screen or of a prehistory of the cinema screen. They are separate, mutually distant episodes belonging to particular, different cultures. I neither wish, nor think it possible to identify a universal foundation for an idea of screen that would unite Homer with Dante or Montale with classical Greece and the Christian East. I began by refuting the affirmation that the functions of monstration and representation come chronologically after those of concealing and protecting, to show how these two categories of functions often occur together and are logically correlated. Furthermore, even among those scholars advocating a chronological development of the term, one finds lines of reasoning, such as Huhtamo's, that cautiously left ample scope for this kind of analysis. As I have argued, the term's meaning underwent no radical shift in the 19th century. Therefore, I suggest, the importance of the advent of cinema and pre-cinema devices in (re?)defining the concept also needs to be brought into perspective, and perhaps scaled down.

Analogously to Christian Jacob's writing about what a map is,[57] I have preferred to consider the screen not as an object but as a function. Or rather, as I have already mentioned, as a set of functions that may seem contradictory but in reality are often complementary. In the examples discussed, the screen is always a crucial element in a schema, a framework or arrangement of subjects and objects of gaze, an instrument to channel the field lines. This arrangement, this spectacular set-up, may, on the one hand, entail a deception, the production of false images; on the other, it is often associated with the production of a miracle, a wonder, a revelation.

Concealing and showing: the permutations between these two aspects can be manifold. The images may serve to produce the wonder, the wonder *of* images that seem real; or the wonder may be produced by revealing what lies behind the

images (*despite* the images); or, on the contrary, it may be protected *by* the images; or, again, the revelation may be produced *through* them. The very connotations of the mediated experience range from complete dysphoria (of the Platonic variety) to the most inspired eschatology. A wide variety of relationships exists between concealing and showing in the history of the concept of screen, but they are often underpinned by a similar framework or general set-up – precisely, indeed, in that it combines these two functions and conjures with these two aspects, albeit in different ways.

To conclude, an open question. Montale's poetry, with which we began our exploration, cannot but bring to the contemporary viewer's mind many recent conspiratorial films – films that, unlike those from the 1970s that Fredric Jameson studied in *The Geopolitical Aesthetic*, show that the conspiracy has failed, not succeeded.[58] This is, above all, the representation of a failure of the screen, of both its functions: of producing fictional images and of concealing the real. Perhaps the insistent representation of this failure of the screen in contemporary film is trying to tell us something about how cinema's ability to present the world has changed? Might the *post-panoramic* paradigm that these films seem to announce be a comment on a (sublime) difficulty in arranging the real? On the other hand, maybe these films reassert and relaunch, albeit in negative form, the screen's very power to fascinate – as, for that matter, also did "Maybe One Morning" (although there the poet avoided any rebellion)?

Or rather, are the screen and its functions really in crisis, due to a shift in the media landscape and in the functions and cultural meaning of the *dispositifs*? The metaphor of the screen as "display," discussed by Francesco Casetti,[59] of a screen that deals with other images only and not the world, that excludes every dimension other than the image itself, could actually suggest a grim outlook for the survival of the functions that we have discussed, a radical alteration of the spectacular frameworks in which the screen traditionally operates. It may well be, on the other hand, that the display function, of intercepting images circulating in the mediasphere, is thematized and problematized in the texts themselves – as, for example, a certain self-reflexive, hyperrealist cinematic poetics has done in the past and continues to do, from Peter Bogdanovich's THE LAST PICTURE SHOW (1971) to Todd Haynes's I'M NOT THERE (2007).[60] The screen would then return to being the screen, to exploring its own substance, its own depth, its own permeability.

Archaic Paradigms of the Screen and Its Images

José Moure

"What is Plato's famous cave" – wonders Paul Valéry in 1939 for the centenary of photography – "if not a camera obscura, the largest ever conceived, I suppose? If Plato had reduced the mouth of his grotto to a tiny hole and applied a sensitized coat to the wall that served as his screen, by developing the rear of the cave he could have obtained a gigantic film."[1] With this "wall" that "served as" and "functioned as" a "screen" before the thing and the word itself were even invented, and that, in his famous allegory, Plato described as "a low wall built along the way, like the screen which marionette players have in front of them, over which they show the puppets"[2] appears one of the first paradigms of the concept of screen as it has existed since shadow theaters and as it has emerged in the late 19th century, notably with the invention of the cinematograph.

Fig. 1: Plato's Allegory of the Cave*, engraving by Jan Saenredam, 1604, British Museum.*

The history of the screen is part of an uncertain history that combines illusion and science and in which the performing arts as well as the areas of physics, geometry, optics, pictorial, architectural and theatrical representation intersect. Inseparable from the history of projection and the process of projecting the image of an object on a medium and representing a three-dimensional object on a flat surface, it is also and primarily part of the history of image transportation. For it is indeed transported images that are projected on the screen, which, as Marcel Proust reminded us regarding the magic lantern, "replac[e] the opacity of the walls with impalpable iridescences, supernatural, multicolored apparitions, where legends were depicted as in a wavering, momentary stained-glass window."[3] On the "wavering, momentary stained-glass window" that was the screen until the end of the 19th century, appear and disappear images of a different kind from those offered by noble arts: these images, far from liberal arts, such as painting and sculpture, are related to the trade and manual virtuosity of the person who produces them. When Plato claims in *The Republic*: "by images I mean, in the first place, shadows, and in the second place, reflections in water and in solid, smooth and polished bodies and the like: Do you understand?"[4] he only refers to these projected, reflected images that can be called "screen images." As if other representations, those which, from cave walls of the Neolithic age to canvases, were printed by the hand of man on a physical medium, were not images or, rather, were more than images: artworks bearing the imprint of the artist or the craftsman who made them. One can then identify, as did Dominique Païni,[5] in "Faut-il en finir avec la projection?" ("Should One Put an End to Projection?"), two main categories of images, *printed images* and *screen images* (projected or reflected), that can be differentiated notably through the process of their creation, their cultural status, and how they offer themselves to the eye. The *printed/screen* image distinction suggests the following:

– The first are manufactured images that cannot be dissociated from the medium to which they adhere; the second result from a projection or reflection device using light, whose rays are intercepted by a screen.
– The first are noble and often used by those in power; the second are more "plebeian" and associated with scholars or street performers.
– The first are "free"; the second are enslaved to a machinic device using a screen.
– The first are material; the second are dematerialized: they are only the product of the transport of light.
– The first are fixed and stable in their being and their appearance; the second are hectic and anxious images that only exist in a fugitive manner, that of presence-absence, appearance-disappearance, "within and during the time of their light transportation."[6]

–   The first require ambient light or light directed at them to be seen; the second, which depend on the light that transports them onto the medium-screen, must be seen in ambient darkness.
–   The first do not assign a definite place to viewers; the second assign to viewers, for the duration of the projection, an "obliged" place induced by the device.

The Mythological Screen

These screen images (shadows, reflections, simulacra), which can detach themselves, spontaneously or artificially, from the things themselves and from their place of origin, and transport themselves, through light, from the source from which they emanate to the medium on which they appear and disappear, therefore appearing as the objective presence of the visible, can be found, first outside of history, in the rational fiction of myths. As if, mediated by the screen, between light and shadow, these images helped us better understand what we call *seeing*, what we call the *visible*, identify what we are looking for or think that we can find in them, recognize the faith we have in our eye, understand the belief that we have in appearances, and remind us of the fascination we have for representation.

The Wall-Screen

If the allegory of the cave, with its motionless prisoners chained in the dark, facing a wall on which appear shadows cast by the fire, contributed to construct and deconstruct the story of an illusion – that of the confusion between reality and representation, suggesting that screens are always misleading, notably because they tend to disappear or not appear as screens – other stories have seen in the first screen images the mythological origins of visual arts and a way to fix the appearance of things. Pondering the beginnings of painting, Roman encyclopaedist Pliny the Elder (23-79) offered to the reflection on art and representation one of its most famous myths through the loving gesture of Butades's daughter who invented a form of visual art by outlining the shadow of her lover's face projected on a wall-screen:

> It was through the service of that same earth that modelling portraits from clay was first invented by Butades, a potter from Sycion, at Corinth. He did this owing to his daughter, who was in love with a young man; and she, when this young man was going abroad, drew in outline on the wall the shadow of his face thrown by the lamp. Her father pressed clay on this and made a relief, which he hardened by exposure to fire with the rest of his pottery; and it is said that this likeness was preserved in the Shrine of the Nymphs until the destruction of Corinth by Mummius.[7]

It is also from the shadows projected on a wall-screen that Athenagoras of Athens (c. 133-190) mentioned the first appearance of images and simulacra. Drawing inspiration from Pliny's story, the Christian philosopher and apologist tried to show the similarity between the simulacra – the images transported by light – and the gods; both human inventions arising from projected shadows:

> Representations of the gods, again, were not in use at all, so long as statuary, and painting, and sculpture were unknown; nor did they become common until Saurias the Samian, and Crato the Sicyonian, and Cleanthes the Corinthian, and the Corinthian damsel appeared, when drawing in outline was invented by Saurias, who sketched a horse in the sun, and painting by Crato, who painted in oil on a whitened tablet the outlines of a man and woman; and the art of making figures in relief (κοροπλαθική) was invented by the damsel, who, being in love with a person, traced his shadow on a wall as he lay asleep, and her father, being delighted with the exactness of the resemblance (he was a potter), carved out the sketch and filled it up with clay: this figure is still preserved at Corinth. After these, Dædalus and Theodorus the Milesian further invented sculpture and statuary. You perceive, then, that the time since representations of form and the making of images began is so short, that we can name the artist of each particular god.[8]

By suggesting that the visual art of modeling resulted from the shadow of a face projected on a wall by the light of a lamp, these mythological stories claim that the screen is the place where the art of making lifelike images started. As if the initial position of the visual artist was to place himself opposite a screen; as if, prior to being a medium, a surface to cover, the wall was considered a screen. On the rectangle defined by the screen, marked by presence and absence, it is the very idea of the image that emerges, an image-shadow that is still only the projection of a desire for a shape to which the potter gives reality by applying clay within the lines of the shadow projected on the wall. The wall-screen operates as a mediation device between the thing itself and its manufactured and materialized representation.

The Mirror-Screen

Another type of screen, the mirror, can be found in the myths of Narcissus and Perseus as recalled by Ovid in his *Metamorphoses*. These two founding stories show us that the encounter of otherness requires the mediation of a mirror-screen whose function is both to show and hide, to bring closer and keep away, to unite and separate. What is at stake in the situation of illusion shown in the myth of Narcissus is less the confrontation to one's own image than the epiphany of the other in the image of the self. In the fountain, Narcissus sees what his own eyes could not see. Neither does he know that he is actually looking at

his own reflection, nor does he see the water. Through the mediation of the mirror-screen, the self is revealed as the other, the model and his reflection are separated, while still being painfully and lovingly united in the vision. Deceived by a water screen that he does not perceive as such, Narcissus sees as a body what is nothing but a shadow, a ghost without substance, as the narrator warns:

> Poor credulous youngster? What you seek is nowhere,
> And if you turn away, you will take with you
> The boy you love. The vision is only shadow,
> Only reflection, lacking any substance.
> It comes with you, it stays with you, it goes
> Away with you, if you can go away.[9]

Charmed by his own reflection, Narcissus tries, to no avail, to retain what was fleetingly reflected in the water and what he is not allowed to touch, as if the screen formed by the water ("a thin film of water") opened up onto a presence to which Narcissus cannot be present, because it is closer than any approach.

> I see him, but the charm and sight escape me
> I love him and I cannot seem to find him!
> To make it worse, no sea, no road, no mountain,
> No city-wall, no gate, no barrier, part us
> But a thin film of water.[10]

In the myth of Perseus, the polished bronze shield that Athena gave the Greek hero so he could see Medusa without directly meeting her petrifying gaze, also operates as a mirror-screen. It not only gives access to the absolute otherness but also has a protective function. It is not Medusa that Perseus sees but his own reflection, the spectral image he will use to guide his fatal blow and thereby decapitate the real monster:

> He also Had seen that face, but only in reflection
> From the bronze shield his left hand bore.[11]

The shield-screen creates the mediation space required to detach the image from its model, therefore protecting Perseus from the lethal glare and helping him accomplish the feat of decapitation.

In the last part of the long epilogue that concludes *Theory of Film*, a part that bears the name of the subtitle of the book itself, *The Redemption of Physical Reality*, Siegfried Kracauer establishes a relationship between the myth of Perseus and film. As Perseus's shield, the cinema screen acts as a redeeming mirror that confronts us with things that we dread:

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The moral of the myth is, of course, that we do not, and cannot, see actual horrors because they paralyze us with blinding fear; and that we shall know what they look like only by watching images of them which reproduce their true appearance. These images have nothing in common with the artist's imaginative rendering of an unseen dread but are in the nature of mirror reflections. Now of all the existing media the cinema alone holds up a mirror to nature. Hence our dependence on it for the reflection of happenings which would petrify us were we to encounter them in real life. The film screen is Athena's polished shield.[12]

From the water screen with which Narcissus unwittingly identifies himself to Perseus's shield-screen diffracting the light beam and allowing him to escape petrification; from the visibility of the double (Narcissus) to the invisibility of the model (Medusa); between artifice and deception, these mythological stories show us the unique ability of some images to appear to the eye, distantly and immediately, outside their place of origin.

The White Screen of the Camera Obscura

This device artifice, which consists of showing things as a shadow or a reflection on a screen, outside their place of origin, finds in the camera obscura its most iconic example. For at least two thousand years, mankind has known that when light passes through a small hole in a dark interior, an inverted image appears on the wall-screen opposite. Aristotle discovered the principle of the pinhole camera, basis of all light projections, and showed that by making a square, round, or rectangular hole in a screen, the solar rays passing through it reconstructed a projected circular image. From the Middle Ages, between the 11th and 13th centuries, the Arab physicist Alhazen, the Polish scientist Vitellio, the English philosopher Roger Bacon, the English scholar John Peckham, and the French astronomer Guillaume de Saint-Cloud also observed this phenomenon and referred to the camera obscura[13] as the best way to observe solar eclipses without burning one's eyes.[14] But it is only at the turn of the 15th and 16th centuries, when new horizons in terms of perception and knowledge of the world were opening, that the camera obscura became a real object of study and was considered as a template to understand the vision process and emphasize the cognitive power of the eye. Leonardo da Vinci was probably the first to accurately describe the operation of the camera obscura: he outlined, before Johannes Kepler (1602), the analogy between the eye and the dark room (the retina playing the role of the screen) and notably underlined its extraordinary ability to capture the images of reality as light circulates in space, and to transport them where one wants, notably on a wall, a bed sheet, or a sheet of paper used as a screen. As early as 1569, in *La practica della perspettiva*, Daniel Barbaro claimed that, by mak-

ing a hole in a window shutter, placing on it "a magnifying glass" and making sure the room remains totally dark, one could see, on a sheet of paper, "the forms as they are, as well as colours and colour gradients, shadows and movement, clouds, rippling water and everything that can be seen."[15] This sounds like a description of a film by the Lumière brothers...

In 1588, in the second edition of his famous *Magiae naturalis*, Italian scientist Giambattista della Porta explained how he organized light shows for his amazed friends, using the camera obscura technique, a dark room, and a large screen made of white sheets:

> That in a dark chamber by white sheets objected, one may see as clearly and perspicuously, as if they were before his eyes, huntings, banquets, armies of enemies, plays, and all things else that one desires. Let there be over against that chamber, where you desire to represent things, some spacious plain, where the sun can freely shine. Upon that you shall set trees in order, also woods, mountains, rivers, and animals that are really so, or made by art, of wood, or some other matter. You must frame little children in them, as we use to bring them in when comedies are acted. And you must counterfeit Stags, Boar, Rhinocerets, Elephants, Lions, and what other creatures you please. Then by degrees they must appear, as coming out of their dens, upon the plain. The hunter must come with his hunting pole, nets, arrows, and other necessaries, that may represent hunting. Let there be horns, Cornets, and trumpets sounded. Those that are in the chamber shall see trees, animals, hunters' faces, and all the rest so plainly, that they cannot tell whether they be true or delusions.[16]

What Della Porta described here is a spectacle on screen, of which he designed the images and sound. He resorted to the camera obscura to project on white sheets moving images with both color and sound. He thus diverted the camera obscura from its scientific use to transform it into an optical theater able to project staged stories and fantastic visions. He recommended placing sets in front of the camera obscura, using actors dressed as animals of all kinds and adding a sound accompaniment. The observer of the camera obscura then becomes a spectator, and the camera obscura becomes a dark room where the spectacle of luminous moving images perfectly resembling the things and wonders of nature is projected on a white screen.

Being a phenomenon of physical optics as well as a device dedicated to both scientific observation and experimentation and live performances that have developed and perfected over time, the camera obscura helped create a link as never before between science and art, thinking and art, truth and illusion, thereby affirming the power of knowledge of vision and establishing a new relationship with the visible: this relationship is mediatized by the screen through a

device that places the eye at the center of the universe, the observer in an isolated place in the world (dark room), the viewpoint outside the body, and the image at a distance from its object (projection).

The Phantasmagorical Screen

To this objective and disembodied conception of vision in the Classical Age, of which the camera obscura is the dominant paradigm, the 19th century substituted new visual models embodied in various devices which, by modifying the physical and mental posture of viewers in front of the screen, forced them to use new ways of seeing and gave rise to a new visual unconscious.

Among the screen spectacles that proliferated during the 19th century, causing, as perfectly described by Raymond Bellour, "through the powers of optics, a transformation of the theatre"[17] (magic lantern shows, panorama, diorama, optical theater, etc.) and taking, through their devices, "the perspective viewpoint of a spectator both individual and collective, captivated by the various illusions of movement falling short of the *real* depiction of life,"[18] phantasmagoria occupies a special place. As an improved version of the magic lantern – a political and educational instrument of the century of Enlightenment, the magic lantern was a spectacle originally intended to educate by demystifying ancient tales and beliefs – phantasmagoria became, during the 19th century, more than a form of representation: a model of fantastic imaginary that proposed a new relationship between the visible and the invisible; a way of "thinking [about] the fascinating and deceptive relationship between reality and the consciousness that reflects, transforms and transfigures it."[19] Probably invented in 1659 by Dutch scientist Christian Huygens and described, explained, and almost trivialized by the scientists and philosophers of the 18th century, the magic lantern finds in phantasmagoria the opportunity to dramatically change its technology and strengthen its illusionist power by moving, on rails or wheels, a very advanced magic lantern called a "fantascope" hidden behind the screen. As explained in 1836 by Victor de Moléon in the article dedicated to Phantasmagoria in his *Dictionnaire de la conversation et de la lecture*:

> The principles underlying the construction of the magic lantern are the same as phantasmagoria: in both instruments, objects are illuminated and magnified by the same lenses adjusted in the same way. But, in the latter, the purpose of the various parts of the machine was modified [...] to produce a much more impressive effect. [...] To increase the illusion, one had the idea of stretching the canvas between the audience and the instrument. Here indeed, the whole mechanism of the operation is invisible to the viewer: the deepest darkness reigns: suddenly, a ghost appears, far, far away at first, appearing as a point of light to the audience. But it soon grows, becomes bigger and bigger

and seems to approach slowly at first, to then rush towards the spectators: the illusion is total.[20]

In this configuration, the screen (a canvas stretched between the audience and the instrument) not only operates as a mask that hides the machinery from the viewer and preserves the magic of the appearance of the image, but tends to disappear as such in the darkness of the projection to give the illusion that it is not images but actual ghosts that appear. Such is indeed the purpose of the screen: giving apparitions and simulacra the status of images. Outside the boundaries of the screen and its perception, the projected appearance is comprehended as a ghostly presence.

Although the creators of phantasmagoria spectacles, the first "fantasmagores," the mysterious Paul Philidor, who appeared in Germany in 1786 and the famous Étienne-Gaspard Robert, also known as Robertson, who began his long career in Paris in 1798, claimed they wanted to fight superstitions and were at the service of science, science which itself was at the service of metaphysics, it is indeed magic and fear that they spread during this revolutionary period. In a hypnotic state that abolishes any individual system of defense against the aggression of images,[21] the spectators were attending an all-encompassing and moving spectacle, whose device was hidden to them,[22] and that used sight, hearing, and smell, mixing luminous figures and actors dressed as ghosts. They saw shadows, ghosts, skeletons, the devil, spirits (famous men recently departed: Mirabeau, Danton, Marat, etc.) emerging from darkness and from everywhere, invading their reception space and reaching out to them, almost touching them. Here the screen is no longer a wall that separates, but an invisible communication portal between two worlds; that of the living and the dead, the present and the past, bodies and spirits. The stage and the room blend into a fantastic projection space where optics and the imagination are one and where, in a total derangement of all the senses, immersed in his own vision, the maltreated viewer undergoes the hallucinatory experience produced by a representation that seems to give dreams a tangible reality.

The hallucinatory experience produced by phantasmagorical magic lantern spectacles was described in 1888 by Swedish writer August Strindberg in his short novel, *Tschandala*, which takes place in the 17th century during the reign of Charles XI of Sweden. The hero, Master Andreas Törner, takes his revenge on a superstitious gypsy by projecting terrifying images on the smoke from a peat fire. The lantern of fear becomes the lantern of death: the victim is the viewer who eventually dies, held captive by an invisible bond linking him to a phantasmagoria that surpasses the dream into palpable reality:

Hidden away among his possessions Törner had an apparatus recently invented by the Jesuit Athanasius Kircher for obscure but no doubt thoroughly

Jesuitical purposes: the *laterna magica* or magic lantern. With its assistance it was possible to produce images in light on walls or smoke or any other background of sufficient density. [...] Törner was sure that, if he could stage a performance that surpassed the gipsy's dream in terms of tangible reality, it would prove utterly overpowering, crushing and suffocating in its effect. All the more so if he reinforced it with the apparition of the dead he was now painting.

So he painted his pictures big and bold so the gipsy would be able to recognize them without difficulty, and he set up his magic lantern. For the pictures to work without the lantern being visible the light had to come from behind the observer, but Törner had to be prepared for the possibility of his victim turning round to investigate the source of the images. In order to obviate the need to extinguish or screen the lantern, he constructed a triangle of three tubes filled with phosphorus and fixed them round the lantern to make it resemble the all-seeing eye above the altar in a church. The gipsy had a choice: he could interpret it either as being the blinding eye of God or as the eye that had been carved on the tree. [...] Darkness had fallen now and the lamps were lit. [...] The gipsy's mind was excited by wine and exertion and a host of fantasies were struggling to reach the surface. [...] When, after five hours, Törner considered he has weakened his will sufficiently for him to be ready to follow every one of his exorcist's commands [...] he lit his lantern and the figure of a woman dressed in black and wearing a white veil immediately emerged from the peat smoke. At first the gipsy seemed unaware of it but when the figure moved, stirred the next puff of wind, he leapt to his feet and stared into the fire. To prevent him examining the image too closely, Törner made the figure disappear and then reappear in the smoke, and each time he slid the glass plate in and out of the lantern the gipsy jumped, leapt up and fell down. It was as if Törner had the gipsy on a string and could set him in motion with a twitch of his finger. Now, having caught the gipsy's attention, he projected an enormous image of the gatekeeper on the wall of mist and smoke. [...] By twisting the lens he made the image come closer and closer and he heard the gipsy begin to howl softly, a continuous, monotonous howl as from a madman [...]. But the gipsy remained standing utterly motionless like a statue, while from the smoke a grass-snake crawled, as if alive, with its yellow ears and pointed forked tongue. The image was so clear and the colors so lifelike that the gipsy could not fail to see it. [...]

Fearing that exhaustion would break the spell, Törner slid a new plate into the lantern and projected the grass-snake metamorphosing into a rat on the densest area of smoke.

The gipsy sank slowly to the ground, drew his legs up under him and, with squeaking noises, began to sniff at all the molehills while now and then

looking up at the smoky image that seemed to have trapped him in an invisible web.

The gipsy's brain was now locked into a fixed path and the road it would follow was predetermined. Even before the next image was revealed around him and, as the form of a hound emerged from the smoke, he began baying horrifically as if this was the moment he had been waiting for. Then a fearful noise came from the back steps of the house and the back door slammed open and shut eight times as the eight starving hounds charged out to attack the unknown intruder. At that moment Master Törner knew what the end would be and, to hasten it, he pointed the lantern down so that the image of the hound shone directly on the white blanket. The pack did not hesitate: all eight joined in a raging, howling mass that pounced on their master and tore him to death.[23]

From the amazed viewers of Della Porta's spectacles, who observed, free and hidden from the world, on a screen of white sheets, a bright representation taking place outside them to Strindberg's victim spectator assaulted by images projected onto an invisible screen of smoke and mist that seem to hold him captive and make him physically (re)act to what he is seeing; from the device of the camera obscura to that of phantasmagoria, what is at stake here is redefining the status of the viewer and, with it, the place assigned to him, his physical and psychological subjection to images and their screens: a subjection or a physical subjectivity that the different screen spectacles that have emerged throughout the 19th century – the panorama, the diorama, the optical theater and, above all, cinema – will only modulate or intensify.

The Screen of Modern Life

Like the spectacle of the dark rooms of the phantasmagoria, panorama, or diorama, the spectacle of modern life, that of the big city and its crowds, the high street and its department stores, or the spectacle provided by new means of transportation such as the train, invites 19th-century man to adopt new patterns of consumption and visual perception that make the screen a paradigm of the relationship with the visible. The passer-by or the man in the crowd, the passenger on the train, and the consumer in department stores become spectators of a new type, immersed in the moving spectacle of a world that constantly calls upon and excites their gaze and gives itself to be seen immediately but at a distance through what one might call *avatars of screens*, screens that are less involved in the transportation of images than that of modern man himself.

The Crowd-Screen

Before Baudelaire, Victor Fournel, in his book *Ce qu'on voit dans les rues de Paris* (*What One Sees in the Streets of Paris*), published in 1858, portrayed a man strolling in the streets of Paris as an "intelligent and conscientious onlooker, destined to play a leading role in the Republic of the art":

> This man is a moving and passionate daguerreotype who keeps the slightest traces, and in whom are reproduced, with their changing reflections, the course of events, the movement of the city, the multiple physiognomy of the public mind, the beliefs, dislikes and subjects of admiration of the crowd [...].
>
> You know Poe's *Man of the Crowd*, the strange and profound storyteller, a realistic and mathematician Hoffmann with poignant fantasies. He described in a few pages of a picturesque and concise energy, the feelings of an observer, whom, behind a café window, watches passers-by move about in the streets of London, and starts following a man whose gait and appearance suggest there is some mystery to discover.
>
> Like Poe, I often isolate myself in the crowd, in the middle of the street, to turn myself into a spectator and sit in the stalls of this improvised theatre. I have sometimes watched, as in a magic lantern, all these shadows dancing before me.[24]

This stroller-spectator, sitting in the stalls of modern life, in the middle of the crowd but isolated; watching, from behind a café window, the moving spectacle of the street and its shadows dancing before him, is very much like the first spectators of the Lumière brothers' cinematograph. For these spectators, as for the perfect stroller described by Baudelaire, who "enters into the crowd as though it were an immense reservoir of electrical energy" and whom the poet compares to "a kaleidoscope gifted with consciousness, responding to each one of its movements and reproducing the multiplicity of life and the flickering grace of all the elements of life":

> It is an immense joy to set up in the heart of the multitude, amid the ebb and flow of movement, in the midst of the fugitive and the infinite. To be away from home and yet to feel oneself everywhere at home; to see the world, to be at the centre of the world, and yet to remain hidden from the world.[25]

The experience of the stroller resembles in many ways that of the cinema spectator as described by Stanley Cavell:

> In viewing films, the sense of invisibility is an expression of modern privacy or anonymity. It is as though the world's projection explains our forms of unknownness and of our inability to know. The explanation is not so much

that the world is passing us by, as we are displaced from our natural habitation within it, placed at a distance from it. The screen overcomes our fixed distance. It makes displacement appear as our natural condition.[26]

The Carriage Window-Screen

The natural condition of displacement that the screen imposes on our perception of the world is the one experienced by 19th-century man when he first travelled by train. An immobile traveler sitting in his carriage, he can see, on the screen of the window, passing at high speed, the fleeting vision of a broken landscape, whose fragments are submitted to unusual combinations that alter his perception, making his eye espouse the movement and speed of the machine.

In a letter to his daughter Adèle, dated August 22, 1837, Victor Hugo described the pleasure given to him by this visual experience that puts perception in motion and dissolves the shapes and contours of the landscape:

> The flowers by the side of the road are no longer flowers but flecks, or rather streaks of red or white; there are no longer any points, everything becomes a streak; the fields of grain are great shocks of yellow hair; fields of alfalfa, long green tresses; the towns, the steeples, and the trees perform a crazy mingling dance on the horizon; from time to time, a shadow, a shape, a specter appears and disappears with lightning speed behind the window: it is a railway guard.[27]

The Shop Window-Screen

If the train makes nature move and offers the traveler, through the screen of the window, a cinematographic series of landscapes, scenes, and views that vanish immediately after having appeared, the department store offered to the gaze of Parisians, especially women, an optical machinery of equal complexity, entirely dedicated to the pleasure of the eye, whose operation was described by Émile Zola in *The Ladies' Paradise*, where the window-shoppers' buying impulse becomes a scopic drive and the pleasure of seeing, up to obliviousness, merges with the desire to buy:

> [W]hat fascinated Denise was the Ladies' Paradise on the other side of the street, for she could see the shop-windows through the open door. The sky was still overcast, but the mildness brought by rain was warming the air in spite of the season; and in the clear light, dusted with sunshine, the great shop was coming to life, and business was in full swing.
>
> Denise felt that she was watching a machine working at high pressure; its dynamism seemed to reach to the display windows themselves. They were no longer the cold windows she had seen in the morning; now they seemed to be warm and vibrating with the activity within. A crowd was looking at them,

groups of women were crushing each other in front of them, a real mob, made brutal by covetousness. And these passions in the street were giving life to the materials [...].[28]

From the stroller-spectator to the consumer-spectator to the traveler-spectator; from the spectacle of the street to that of shop windows to the spectacle of "moving pictures" passing beyond the windows of train carriages, 19th-century man, facing the screens of modern life, must always adapt his perception to moving, multiple and fleeting images: an anxious, fragmented, unstable, and changing perception that puts him at the center of the world but also keeps him hidden from it, and prevents him from distinguishing the vision of the spectacle from the spectacle of the vision.

The Screen of Science Fiction

The screen devices proposed by social science fiction in the late 19th century are of another kind entirely. By inventing the scenarios of a sometimes very near future, this literary genre not only fictionalized and socialized the scientific and technical advances of the time, but above all reflected the expectations and beliefs that fuelled the imaginary of a century that seemed open to all possibilities and expressed a confidence in the unlimited power of the machine: a machine using sight and hearing that is considered both as a medium and as a technology, envisioned both as a means of reproduction and telecommunication and as a social means of mediation and dissemination and to which are ascribed more or less utopian powers – reproducing the world and recreating life, triumphing over death and time, abolishing distance, and conquering ubiquity – which foreshadowed both cinema and television.

The Screen of Reconstructed Life
It is the dream of a complete reconstruction of life on screen that is formulated in the photographic and projection device used by the fictitious Edison of *The Future Eve* (1886) to summon the image of Evelyn Habal. Inspired by Marey's work, Villiers de l'Isle-Adam described the projection of a film that restored "as lively as those of life itself" the images of a dancing body. "On the wide white screen," the vision becomes moving, speaking and singing flesh:

A long strip of transparent plastic encrusted with bits of tinted glass moved laterally along two steel tracks before the luminous cone of the astral lamp. Drawn by a clockwork mechanism at one of its ends, this strip began to glide swiftly between the lens and the disk of a powerful reflector. Suddenly on the wide white screen within its frame of ebony flashed the life-size figure of a very pretty and quite youthful blonde girl.

The transparent vision, miraculously caught in color photography, wore a spangled costume as she danced a popular Mexican dance. Her movements were as lively as those of life itself, thanks to the procedures of successive photography, which can record on its microscopic glasses ten minutes of action to be projected on the screen by a powerful lampascope using more than a few feet of film.[29]

In Jules Verne's novel, *The Castle of the Carpathians* (1892), music-loving Baron Rudolf de Gortz steals, thanks to the technological genius of his assistant, Orfanik, the image and the voice of a Neapolitan opera singer, La Stilla, the day she dies on stage. In his castle, he then listens over and over again to the recording of the sound image of the young woman reflected in a mirror-screen:

These were the circumstances under which the baron had shut himself up in the Castle of the Carpathians, and there, each night, he listened to the music given out by the phonograph. And not only did he hear La Stilla as if he were in his box, but – and that would appear absolutely incomprehensible – he saw her as if she were alive, before his eyes.
It was a simple optical illusion.
    It will be remembered that Baron de Gortz has obtained a magnificent portrait of the singer. This portrait represented her in the white costume of Angelica in "Orlando," her magnificent hair in disorder, her arms extended. By means of glasses inclined at a certain angle calculated by Orfanik, when a light was thrown on the portrait placed in front of a glass, La Stilla appeared by reflection as real as if she were alive, and in all the splendour of her beauty.[30]

The Screen of Time

Triumphing over death is also being able to travel back in time to watch the passing of past and future centuries. In Eugène Mouton's tale, *The Historioscope* (1882), the narrator, an historian, meets an old man who tells him he has discovered a way to travel back in time through images. His invention, a kind of high-powered telescope able to see at great distance the images of past events that have been emitted and transported in the universe through the propagation of light waves and which, like mirages, are projected onto the mirror-screen of the ether. To the narrator who asks him "how are formed […] these images, these scenes that, whether at the surface of the earth or in space, produce in the eyes of travellers such total illusions," the old man replies:

By a combination of refraction and reflection determined by heat in the air layers. Well, if we ignore the nature and properties of the ether, as we call it, we know at least that the light of celestial bodies and the sun's heat pass

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through its substance, since they reach us: why couldn't they determine optical phenomena similar to the mirages that we see appearing in our atmosphere? That's what you are asking about, that's the mirror in which the images of things on earth are reflected, to then resurrect in your eyes![31]

The Screen at Home

"I do not know whether a philosopher has ever dreamed of a company engaged in the home delivery of Sensory Reality"[32] reflects Paul Valéry in 1928, in his famous *Conquest of Ubiquity*. This is a dream that many 19th-century social science-fiction writers have had when imagining a world where all the possibilities of telecommunications would be exploited, a pre-televisual world where beings and "[w]orks of art will acquire a kind of ubiquity," where "[w]e shall only have to summon them and there they will be [...]" where "they will not merely exist in themselves but will exist wherever someone with a certain apparatus happens to be."[33]

This world reminds us of Industria City, the society described by author Didier de Chousy as early as 1883 in his science-fiction novel *Ignis*:

> The inhabitants of Industria feel so good at home that they rarely go out, although they can remain at home while going out. Absence, the ache of tender souls, had been removed. Everyone is ubiquitous, both at home and elsewhere.[34]

The instrument at the service of this technical utopia that consists in abolishing distance and eliminating absence is called *telechromophotophonotetroscope*. A precursor of television, it could electrically reproduce "the figure, the speech, the gesture of an absent person with a truthfulness that is equivalent to their actual presence" and its various applications made it a true medium, generating social harmony:

> One can understand all the benefits of such an instrument and all the activity it gave to relationships. No more isolation or loneliness, willingly or unwillingly, people received at any time the spectral visit of an absent friend, parents from the country or idle neighbours, coming informally to spend an hour or a few days at home. Such was the unity of all the inhabitants of this country, linked into one single family with ties so tight that one could not cut out one member without making the whole body scream, or pull a hair without pulling a whole tuft.
>
> The invention that I just described also applied to spectacles, to which no one went, since one could enjoy them at home. Thus, theatres only were, despite their magnificence, mere music boxes, drama factories whose products telechromophotophonotetroscopy brought to your home; and whose

excess, overflowing through the diaphonic cupola equipping each room, was spread in the atmosphere and pervaded it with harmony.[35]

The same year as Didier de Chousy, novelist and illustrator Albert Robida, in his novel *The Twentieth Century*, dated the widespread use of the telephonoscope to the early 1950s (date of the arrival of television in American homes!). A more advanced version of the phone (videophone), precursor of television and its uses (TV broadcast) and mass media, the device looked like a flat wall-screen that transmitted the latest theater plays at home:

> Such is, nevertheless, the wonder brought by the invention of the telephonoscope. Founded in 1945, the Universal Theatrical Telephonoscope Company now boasts six hundred subscribers in all parts of the world. This corporation has centralized the wire network system and pays subsidies to affiliated theaters.
>
> The device consists of a simple crystal screen, flush with the wall or set up as a mirror above a fire place. No need for the theater lover to leave his home: he simply sits in front of the screen, chooses his theater, establishes the communication, and the show begins at once. With the telephonoscope – the word says it all – one can both see and hear. Dialog and music are transmitted through a simple telephone, but along with it the very stage and its lighting, its backgrounds and actors. They all appear with the sharpness of direct vision on the large crystal screen; thus, one virtually attends the performance, sights and sounds alike. The illusion is complete, absolute, as if one were sitting in the front row.[36]

As much as radio and television, and more than cinema, this visionary novel announced, with certain humor and critical distance, a world where distant communication is generalized; an industry of culture in the era of technical reproduction. As predicted in 1895 by writer and journalist Octave Uzanne, in this civilization of the screen more than of the image, books (and Gutenberg's invention) have become obsolete, replaced by tablets-screens that can be found in all public places:

> The phonography of the future will be at the service of our grandchildren on all the occasions of life. Every restaurant-table will be provided with its phonographic collection; the public carriages, the waiting rooms, the staterooms of steamers, the halls and chambers of hotels will contain phonographotecks for the use of travellers. The railways will replace the parlor car by a sort of Pullman Circulating Library, which will cause travellers to forget the weariness of the way while leaving their eyes free to admire the landscapes through which they are passing.[37]

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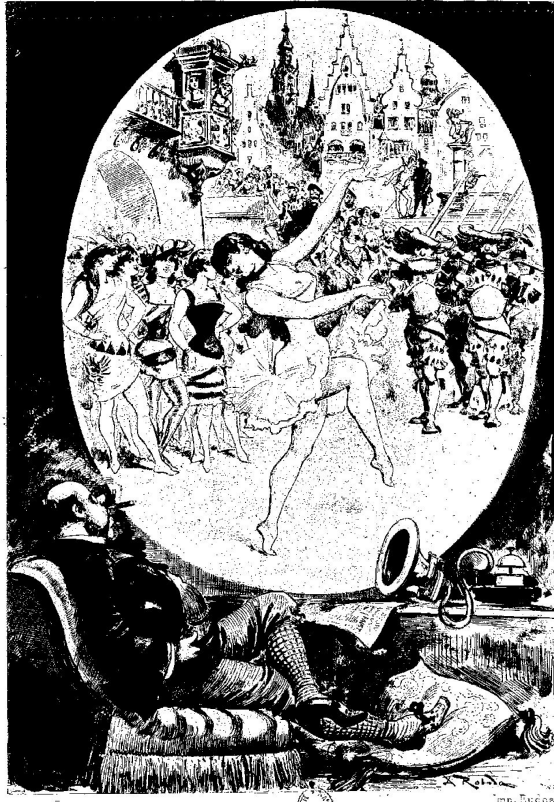
Fig. 2: "The theater at home with the Telephonoscope" by Albert Robida. Source:
Le Vingtième Siècle *(Paris: George Decaux, 1883), 56.*

As for Thomas Edison's kinetograph, of which the author had been able to
attend one of the first demonstrations in Orange Park during a recent visit made
to the great electrician near New Jersey, he predicts the following:

> The kinetograph will be the illustrator of daily life; not only shall we see it
> operating in its case, but by a system of lenses and reflectors all the figures in
> action which it will present in photochromo may be projected upon large
> white screens in our own homes. Scenes described in works of fiction and
> romances of adventure will be imitated by appropriately dressed figurants
> and immediately recorded. We shall also have, by way of supplement to the
> daily phonographic journal, a series of illustrations of the day, slices of active
> life, so to speak, fresh cut from the actual. We shall see the new pieces and
> the actors at the theatre, as easily as we may already hear them, in our own
> homes; we shall have the portrait, and, better still, the very play of counte-

nance, of famous men, criminals, beautiful women. It will not be art, it is true, but at least it will be life, natural under all its make-up, clear, precise, and sometimes even cruel.[38]

The Screen of the Soul or Cerebral Interfaces…

In this science-fiction world, the cinematograph already seems dated before it could even project its images on the screen of the Salon Indien of the Grand Café; it is preceded by the kinetograph, ancestor of television equipped with a screen, which illustrates daily life and broadcasts perceptible reality at home. But the future no longer seems to belong to the screens that are in danger of being replaced by images generated directly in the brain.

Imagining in his novel *La fin du monde* written in 1894 the future destiny of humanity, from the 25th century to the next ten million years, astronomer and science writer Camille Flammarion depicted a civilization in which communication is so complete that "every sensation is in the brain," in the same way as souls communicate with each other. One just needs to think and want to see the tangible and audible image of the absent:

> As a mental operation thought became a different thing from what it now is. [...] Mind acted readily upon mind at a distance. The ethereal vibrations resulting from cerebral movements were transmitted by virtue of transcendental magnetism, of which even children knew how to avail themselves. Every thought excites a vibratory motion in the brain; this movement gives rise to ethereal waves and, when these waves encounter a brain in harmony with the first, they can communicate to it the initial thought that gave rise to them, in the same way as a vibrating string distantly receives the ripple emanating from a distant sound and the plate of the telephone restores the voice silently transported by an electrical movement. These faculties, long latent in the human body, had been studied, analysed and developed. It was not uncommon to see a thought evoke another remotely and bring up the image of the desired being. The being evoked the being. Women continued to exercise a stronger attraction on men than that of men on women. Men were always the slaves of love. During hours of absence, loneliness, daydreaming, women only needed to think, desire, call for, to see the sweet image of the beloved appear. And sometimes the communication was so complete that the image became tangible and audible, as the vibrations of the two brains were so unified. Every sensation is in the brain, not elsewhere.[39]

Such is perhaps the fate of screens, dreamed up as early as the late 19th century. By dint of miniaturization, they will eventually become completely invisible, be diluted in bodies and become brain interfaces. In a world without screens, where visual data will be displayed without the mediation of the screen, images will

continue to appear for what they are not and, as for the prisoners of Plato's cave, it will be difficult for those who experience them to distinguish reality from its representation and differentiate the images generated by the brain or sensory interfaces from natural mental images. But that is another story that takes place between the brain and the retina and has already been embraced by neurotechnology.

Translated by Nick Cowling and Marie-Noëlle Dumaz

Thematizing the "Arche-Screen" through Its Variations[1]

Mauro Carbone

For a Screens' Archaeology

In his essay entitled "L'acinéma" ("Acinema"), originally published in 1973, the French philosopher Jean-François Lyotard famously draws two complementary parallels: on the one hand, that between the body of the *infans* and the social body; on the other hand, that between the function of mirror stage according to Lacan and the function of the cinema screen. On the basis of this double parallel, Lyotard suggests that the cinema screen works to produce an imaginary unity of the social body, in a similar way to the mirror, which produces an imaginary unity of the *infans*'s body, i.e., a unity reached by assuming one's own specular image. Lyotard thus points out a fundamental objective for our reflection: "We will have to ask ourselves how and why the *specular wall* in general, and thus the cinema screen in particular, can become a privileged place of the libidinal cathexis."[2]

In other, contemporary writings, Lyotard indirectly provides some details concerning this "*specular wall* in general." Indeed, in his 1971[3] essay entitled "Freud selon Cézanne" ("Freud According to Cézanne"), he defines the painter's canvas as a "plastic screen." As he explains in a lecture given at the Sorbonne one year later, this "plastic screen" is "usually treated as a window opening onto a view, onto a scene that would be out there, on the other side, behind the support."[4] In this latter characterization, there is a clear echo of the Renaissance theories of perspective, and in particular of the following famous statement formulated by Leon Battista Alberti in his treatise *De Pictura* (*On Painting*), originally published in Latin in 1435: "Let me tell you what I do when I am painting. First of all, on the surface on which I am going to paint, I draw a rectangle of whatever size I want, *which I regard as an open window through which the subject to be painted is seen*."[5]

As we know, this statement is considered to open what Martin Jay describes as the dominant "scopic regime of modernity," i.e., a regime "which we can identify with Renaissance notions of perspective in the visual arts and Cartesian ideas of subjective rationality in philosophy."[6] Starting with Alberti, the window hence

becomes the optical apparatus taken on by the epoch we call "modern" as the model of our way of seeing.[7] If for Lyotard the cinema screen is then a particular case of what he called "the *specular wall* in general," there would seem to be little need to add that the window, too, could be considered as such.

In his classic book entitled *The Language of New Media*,[8] Lev Manovich proposes "A Screen's Genealogy" in which these two cases are respectively classified as the end and the beginning of the first phase of this genealogy, the phase of the "classic screen."[9] Indeed, the screen is defined by Manovich as "an intriguing phenomenon" typical of the "visual culture of the modern period."[10] Could we say the same thing regarding "the *specular wall* in general" that Lyotard evoked? Even in its generality, should it be considered as a phenomenon that does not predate modernity? Or does it have a longer history? And if so, what does such a history have in common with screens?

Among those elements of continuity common to different phases of the screen's genealogy, Manovich calls attention, of course, to the shape he defines as "rectangular" and whose Albertian origin he rightly recalls, although Alberti characterized it more properly as "quadrangular." As Manovich writes:

> Another feature of cinematic perception which persists in cultural interfaces[11] is a rectangular framing of represented reality. Cinema itself inherited this framing from Western painting. Since the Renaissance, the frame acted as a window onto a larger space which was assumed to extend beyond the frame. This space was cut by the frame's rectangle into two parts: "onscreen space," the part which is inside the frame, and the part which is outside. In the famous formulation of Leon-Battista Alberti, the frame acted as a window onto the world.[12]

Once again, we are led back to the dawning of modernity, but not further back than this. I believe, however, that we cannot stop here. Let us try to go further back in our history.

By referring to the Latin formulation of the aforementioned Albertian passage, the French art historian Daniel Arasse translates through the verb "to contemplate" the term *contueatur*, which corresponds to the "is seen" of the quoted English version. As Arasse remarks:

> I have always been fascinated by the verb "to contemplate." It has an extreme logic, for within "to contemplate" there is "temple." And the *templum* that was contemplated was the *square* or the *rectangle* that the Roman haruspices used to draw with their staff in the sky to wait and see how the eagles would cross it. According to the direction, to the number of eagles, and to their speed, the haruspices could interpret in one way or another what those signs said.[13]

On this basis, Arasse emphasizes that a notion recurs historically: that of

> the delimitation of an area, starting in the sky, which then is set on the ground as *templum*, place of the sacred, and then again in painting as the Albertian quadrangle that institutes the *templum* of painting where the composition is expected to be contemplated.[14]

In short, the linguistic link Arasse sees is important in order to highlight a continuity between the haruspices' gesture and that of Alberti, both of which consist of "delimiting" – that is to say, in Manovich's terms, separating from the larger space which is outside – the surface of a "quadrangle" that our culture still invests with peculiar characteristics and with a particular relationship to our gaze. Indeed,

> [w]hen put on the surface of the painting that is delimited by rectangular edges, paint as matter – what one squeezes out of paint tubes – becomes something else: that is, signifier, an object of art, of admiration, of interrogation. Paint is not just paint. The human adds something to it. Imaginary and symbolic are added to the real. When the painter puts his brush imbued with paint on the canvas, he leaves, in a sense, signs to be divined.[15]

We heard Manovich remind us that even the cinema and computer screens present themselves as "rectangular" surfaces. I would add that they are in their turn invested with peculiar characteristics and with a particular relationship to our gaze in which some signs of the characteristics and relationship that Arasse traces back to the gesture of the Roman haruspices seem to survive. These characteristics and this relationship are such as to confer on what appears on those surfaces a value *exceeding* its mere appearing. In short, and to echo an earlier sentence, we can say that even what appears on these screens is not just what appears.

It must be added, however, that the custom of investing a certain surface with a privileged relation with truth seems to be much more ancient than the *templum* institution itself. First of all, this custom extends as far back as what the ancient Greeks called ἕδρα. Indeed, in his *Agamemnon*, first performed in 458 BCE, Aeschylus uses precisely this term, meaning a place devoted to the sacred contemplation of birds; that is to say, something similar to what Arasse describes above as *templum*.[16] Moreover, the aforementioned custom can even be traced as far back as the τέμενος, the "sacred enclosure," whose name significantly derives from the verb τέμνω, "to cut," and seems to be at the origin of the word *templum* as well.[17] However, if one looks deeper, the custom of conferring on a certain surface a privileged relationship to truth can also be found in the curtain that, in 6th century BCE, Pythagoras inherits from the sacerdotal tradition to separate

those having the right to see him from those who are only allowed to listen to him.[18] In this case, however, that surface does not *overdetermine* the visible as the *templum* does, but *forbids* it. Or rather, it *overdetermines* the visible by forbidding it.

But how far back can one go in tracking what seem to be other examples of Lyotard's "*specular wall* in general"? According to Merleau-Ponty, one could go as far back as 21,000 years. Indeed, in *Eye and Mind* he writes, "From Lascaux to our time, pure or impure, figurative or not, painting celebrates no other enigma but that of visibility."[19] Merleau-Ponty, however, could not know the astonishing rupestrian images of the Chauvet Cave, discovered in France in 1994, which are thought to be 36,000 years old, the most ancient of humanity. When referring to them, it is hard to talk simply about "painting" or generally about "visibility." The choice to work on the darkest parts of the cave rather than the brightest; the game of lights produced by the torches that are necessary to admire them and to project on them shadow movements; the scrapes of some surfaces as a means to whiten them before all further interventions; the elaboration of kinetic figures; the three-dimensional effect that is often impressed on them by exploiting the conformation of the walls and by working on them with pictorial interventions or engravings; the sound accompaniment realized by beating the rocks and exploiting the echo effects: all these elements contribute to suggesting, more specifically, that what happened in the Chauvet Cave was a sophisticated *collective effort to contemplate moving images*, so much as to induce Werner Herzog to describe it as "almost like a form of proto-cinema,"[20] while Marc Azéma refers to it as "a real 'pre-history' of cinema."[21] Of course, such an effort aims to celebrate, generally speaking, what Merleau-Ponty called "the enigma of visibility," but I would say, more precisely, that it aims *to celebrate the enigma of images themselves, as well as the enigma of the surface that is invested with such a celebration and therefore delimited from the surrounding space*. That is, precisely the surface that Lyotard calls "the *specular wall* in general."

By extending the language that Bernard Stiegler borrows from Derrida in speaking of "arche-cinema,"[22] I would propose to define such a surface as "arche-screen," understood as the whole of the conditions of the possibility of "showing" (*monstration*), which in our culture would have been *created* by the rupestrian wall, the veil, the curtain, the *templum*, and the window, as well as by the pre-cinematographic and cinematographic screens, and even by today's computer screens. This list, however, is by no means exhaustive.

From the historically existent Chauvet Cave, we shall now necessarily turn to the mythical cave Plato conceived in *The Republic*, Book VII, in an attempt to explore at least some of the conditions of possibility of showing that are implicit in the notion of arche-screen.[23]

Plato's Cave: How Many Screens Can You See in the Picture?

In his "Allegory of the Cave," Plato talks about what is often translated as the "opposite wall" (τὸpposite wal),[24] which works like a screen meant as a surface for showing images, since it is precisely on this surface that the cave's prisoners see shadows of the objects carried by men behind them. Plato alludes just twice to this wall. The second time he imagines that it echoes the human voices sounding into the cave.[25] It is the only allusion to a way in which this wall could indirectly contribute to *producing* rather than just to *reproducing* the illusion of images that are supposed to be "sensible reality" itself.

The wall we are speaking of is opposed to another one, which Plato calls a *teikhíon*, a word meaning a low wall built along a road.[26] The cave's *teikhíon* has the purpose of concealing the people carrying the various objects that rise above the low wall – similar to what usually happens with puppeteers. In fact, according to Plato's account, the *teikhíon* works as a *paráphragma*, from behind which the puppeteers exhibit the puppets to the audience.[27] Indeed, the word *paráphragma* (mainly used in the plural form *paraphrágmata*) has the same root as the verb *phrássō*, whose general meaning is "(to) *fence in*, (to) *hedge round*, hence with collateral notion of defence, *secure, fortify*."[28] Thus, the meaning of the word *paráphragma* in Plato's passage turns out to be very close to the original meaning of the word "screen" – to which Manovich, curiously, does not make any allusion, and which, starting at the end of the 13th century, comes to designate something giving shelter, protection or concealment.[29]

Therefore, the *teikhíon* can be reasonably considered a screen as well, in the sense that it *protects* – according to the meaning of the Latin *pro-tegere*, that is, to "cover in front" – and hence conceals the men who are part of the machinery of the Cave, whose shadows, for this very reason, are not to be cast on the *opposite wall*. Moreover, from this argument one may infer that the *teikhíon* holds a selective task: indeed, the *teikhíon* picks out what has to be displayed on the *opposite wall* and screens off what, instead, has to remain hidden to the prisoners' eyes.

Thus, in Plato's Cave the *opposite wall* does not seem to be the only screen to take note of. Of course, insofar as it is the space on which the shadows are projected, it is easier to recognize its role at first glance. However, a closer reading may reveal that the *teikhíon* performs the double function of concealing by offering a protection and of selecting things to be shown – which are both, actually, characteristic of an "arche-screen." Lastly, consulting the Greek text, one might note that the comparison with the *paraphrágmata* – a term mainly intended to indicate a protective device as a breastwork or a bulwark[30] – undoubtedly recalls the meaning of the Old Frankish verb *skirmjan*, in which the word "screen" finds its original root.

Hence, I would like to state that in his "Allegory of the Cave" Plato presents the two fundamental possibilities of the arche-screen, i.e., the screen as a concealing

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surface and the screen as a showing surface, neither of which can be merely opposed or separated from the other, either logically or historically. Indeed, both surfaces are portions delimited from the surrounding space, thus founding a peculiar relationship with it as well as the very *possibility of a third pole*. In the case of vision, this relationship is usually characterized as a mutual relationship between foreground and background. Indeed, as the *Gestalt* theory has pointed out, such a relationship *reciprocally* constitutes the one as the visible of the other, and it also founds a point of view as its third pole. In this sense, the arche-screen can be seen as a constituting part of the *fold* that allows vision itself. In fact, this fold produces the simultaneous blossoming of the visible foreground, its invisible background, and the viewer.

The Arche-Screen as an Excessive Screen

Both as a concealing and as a showing surface, the arche-screen *overdetermines* the space to which it is related. Thus, in one way or another, an arche-screen presents more than itself, it presents by *exceeding* itself. In this sense, it turns out that the arche-screen cannot be but an *excessive screen*, which, for this reason, cannot but solicit our desire in various forms, promising us "always 'something else to see,'"[31] as Merleau-Ponty puts it. This brings us back to Lyotard's question concerning the reasons for which "the *specular wall* in general [...] can become a privileged place of the libidinal cathexis" cited at the outset, for have we not found the answer right here? Of course, the arche-screen can mark the excessive feature of the concerned space in different ways: not only by simply *delimiting* but also by *superimposing* itself to that very space, or even by a combination of these two processes. In the first case, the delimited space is overdetermined in a *positive* way; whereas in the second case, the space is overdetermined in a *negative* way, since we are *forbidden* to see it. Actually, a prohibition is always a way to establish a communication with what is prohibited, and therefore *a way to exceed* the prohibition itself, as negative theology taught us on the one hand, and as "negation" does, on the other hand, in Freud's concept of the unconscious: "You ask who this person in the dream can be. It's *not* my mother," the patient says. Freud hence emends: "So it *is* his mother."[32]

The screen as a way of presenting something negatively is also found in the aforementioned case of Pythagoras's curtain, and in another *variation founding the theme of the arche-screen in our culture*: that is, the case of Isis's veil,[33] which precisely for its negative aspect was considered by Kant to be an example of sublime expression. As Kant himself writes: "Perhaps nothing more sublime has ever been said, or any thought more sublimely expressed, than in the inscription over the temple of Isis (Mother Nature): 'I am all that is, that was, and that will be, and my veil no mortal has removed.'"[34]

One of the classical sources concerning that inscription is Plutarch's *De Iside et Osiride*,[35] according to which Isis's veil is "variegated in colour (for her essential power concerns the material, which becomes everything and receives everything...)."[36] As Plutarch points out, this veil is able to show Mother Nature's very nature – an always becoming nature, like that of images – precisely because *it has never been lifted*.[37]

Thus, Plutarch provides us with a variation on the motif that Merleau-Ponty would thematize nineteen centuries later with regard to a similar case when he stated that "here [...] there is no vision without the screen."[38] Nevertheless, the screen evoked by Merleau-Ponty has to be understood, in my opinion, as the "arche-screen" itself, rather than a particular case of it. Indeed, as we saw, the arche-screen as such shows us, either in a positive or in a negative way, the excessive feature of the space to which it is related, thus founding for us a positive or a negative presentation of the mutual references between this space and the world. In this sense, we can state that *the arche-screen is, as such, a surface instituting relationships*.

In this way the arche-screen *accentuates* the *side* of our sensible relationship with the world called "imagination."[39] As I pointed out, this side does not simply concern vision, however much we may take vision as an exemplary case. If, as I stated, there is no vision without the arche-screen, then the arche-screen not only allows the direct power of vision but also releases that indirect or negative power of vision of which imagination consists. This is what happens in the Italian poet Giacomo Leopardi's poem "L'infinito" ("The Infinite"), in which he describes the sight of a "hedgerow" (*siepe*) on a lonely hill. The term "hedgerow" reminds us of the verb "to hedge round," defining the general meaning of the Greek verb *phremin*, which is close to the original meaning of the word "screen." This hedgerow prevents the poet's gaze (*guardo*) from seeing the view that stretches down the hillside. Nevertheless, when he sits and *contemplates* (miri[40]) the hedgerow, he is able to imagine "endless spaces and more-than-human silences and a deepest peace." Thus, Leopardi's poem suggests not only that there is no vision without the arche-screen but also that there is no vision without imagination. In fact, if the arche-screen *allows* the former, it indeed *urges* the latter.

Moreover, we should point out that the inseparability of vision and arche-screen cannot but mark all the different prehistoric and historic variations founding the theme of the arche-screen in human culture.[41] I believe we could ascribe to each arche-screen variation what Merleau-Ponty writes in *Eye and Mind* about the imaginary, which he describes as the actual's "pulp and carnal obverse exposed to view for the first time."[42] What appears in each variation of the arche-screen is expected to exceed what appears in fact, and therefore it is supposed to maintain a special relation with truth, leaving us with the suggestion that the arche-screen itself is a place devoted to these kinds of relations and therefore a place for the sacred, however it is taken.

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Concerning the latter point, let me remind you that in the *Critique of the Power of Judgment*, Kant cites as a typically sublime example of *negative presentation* the Jewish commandment: "Thou shalt not make unto thyself any graven image" (*Exodus*, XX,4) of the absolute.[43] On the other hand, St. Paul's suggestion to move *per visibilia ad invisibilia* (through the visible to the invisible) sounds more like a typical Catholic way of thinking about the sensible as a *positive* although indirect *presentation* of an exceeding supersensible.

In his turn, Friedrich Nietzsche implicitly evokes Plutarch's view when, in 1886, he writes:

> We no longer believe that truth remains truth when one pulls off the veil; we have lived too much to believe this. Today we consider it a matter of decency not to wish to see everything naked, to be present everywhere, to understand and "know" everything. [...] Perhaps truth is a woman who has grounds for not showing her grounds?[44]

Despite Plutarch's echo, Nietzsche considers the idea of an inseparability between truth and its veil like the beginning of a radically new way of conceiving both truth and the veil. Following Nietzsche's suggestion, one might even be tempted to connect it with the by then imminent birth of cinema, understood as an optical apparatus that seems to be based on such an idea. In this sense, it would be tempting to conceive, once again, screens as a merely modern phenomenon. However, on closer inspection, we have discovered that human culture has constantly been haunted by the search for variations of an "arche-screen" in order to see images, since "to see is as a matter of principle to see farther than one sees."[45] Hence, even if "the screen" were to disappear, as many claim it will,[46] I firmly believe that the "arche-screen" would not.

Translated by Marta Nijhuis

The Stuff of Screens

Ian Christie

Screens are everywhere today, and we are conscious of their ubiquity as never before.[1] Yet these screens are predominantly electronic displays, and for much of the 20th century, when screens were recipients of projected light, they were invisible and unmentioned, even when invoked in the titles of trade journals, or as a synonym for "cinema" (as in "screen star" and, of course, "screen test"). From the 1970s onwards, when relationships between spectators and images on screens began to be theorized, the materiality of the screen was even less considered, as it was figured variously as a "mirror" or the threshold of a psychic space.[2]

My concern here is with the adoption of the screen as a condition of filmic imagery. Neither of the earliest successful moving-image systems had foreseen projection on a screen as the mode of display. In the 1880s and early 1890s, Anschütz's Schnellseher and later Tachyscope both used series of photographs, the latter printed on glass, which were viewed in motion;[3] while Edison's Kinetoscope offered individual viewers the chance to view back-lit images on a celluloid strip. But after the success of the Lumières' Cinematograph, using an adaptation of the magic lantern to project images onto a screen, all subsequent development of moving pictures adopted this format.
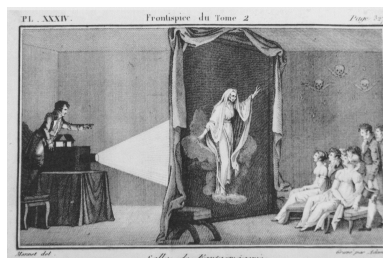

Fig. 1: Early Phantasmagoria illustration.

In doing so, they were joining a tradition that stretched back to the earliest forms of projecting lantern, when painted transparencies created enlarged images on a white wall or a bed-sheet.[4] These same resources would continue to be used for centuries, with only one major variation: the translucent screen. First used by the

showmen of the Phantasmagoria in the late 18th century, such screens of muslin or cotton were wetted to improve translucency, making possible projection from behind the screen, which concealed the source of the imagery being seen by viewers in front. A further variation was to project onto a cloud of smoke or steam, creating an even more "phantasmagoric" image. Rear-projection onto a wet screen would return in some of the large music halls when film entered their programs in 1896.[5] It was also used in the Lumières' spectacular presentation at the 1900 Exposition Universelle in Paris, where a Cinématographe Geant showed 75mm moving pictures (rather than the already standard 35mm) as well as color slides on a screen measuring 21 x 18 meters. This was kept wet by a fountain arrangement in the Galerie des Machines of the Grand Palais, allowing spectators to view it from both sides.[6]

Fig. 2: Paul Sandby, The Laterna Magica *(1760).*

The mid-19th century had seen a steady expansion of lantern-based shows, with new venues installing permanent and much larger screens than hitherto. This was made possible by the introduction of a new source of illumination in 1838, colloquially known as "limelight," which gave an intense white light capable of filling a large screen.[7] Such screens were generally square, even though lantern-slide images were often circular, and could be made from a variety of cloths (muslin, linen, calico, canvas), or from sheets of gypsum, which apparently gave a more luminous image. Frames might be used to tension or reinforce the screen's material, or for decorative effect, as was common in theater; and these would sometimes become an integral part of the display, "framing" the projected image. One such was the "elaborate gilt picture frame," lowered into view at Koster and Bial's Music Hall in New York on April 23, 1896 for the debut of Edison's Vitascope, a hastily-arranged response to the competition of projection-based devices in Europe.[8]
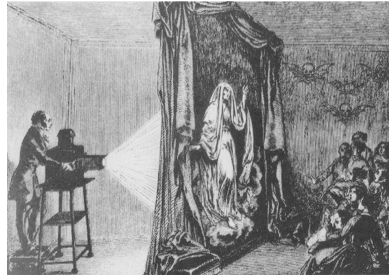
Fig. 3: Robertson's Phantasmagoria (19c engraving).

One Edison advertisement of this era shows a clearly exaggerated gilt-framed screen occupying the entire wall of a large theater. But there is also interesting evidence to be found in a familiar early Lumière advertisement for the Cinématographe as a "family" entertainment, which shows an un-framed screen, with only simple drapes at its edges. Two early films, both showing an unsophisticated spectator bemused by images on the screen, may offer further evidence. Robert Paul's The Countryman and the Cinematograph (1901) has a "genteel" framed image, with a neoclassical design consisting of a pillar and ornate lower panel at the left side of the screen. The Edison remake, Uncle Josh at the Moving Picture Show (1902), has painted scenery in similar style, with a box at the left, but the film image is shown reaching down to the ground (possibly to make it as large as possible for the sake of clarity). Whether we can take any of these as accurate representations of screening conditions in the early period must remain speculative; although by the time of films like Those Awful Hats (D.W. Griffith, 1909) or Tillie's Punctured Romance (Mack Sennett, 1914), there was presumably a need to show recognizable cinema settings. Both show a beveled black surround to the film-within-a-film image, with a decorative pillar in the former and a gilt picture-frame in the latter.
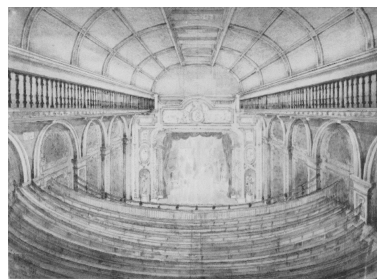
Fig. 4: Royal Polytechnic, London: watercolour of main theater.
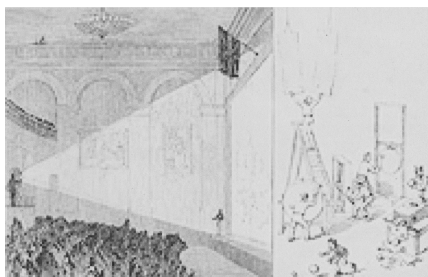
Fig. 5: Diagram of "dissolving views" operation.

Despite the common requirement of a white or light-toned flat surface on which images could be projected, there were apparently significant national differences in screen style during the early decades of film exhibition. American screens seem to have retained the "gilded frame," regarded as "the one element common to both vaudeville and nickelodeon settings [...] until the introduction of the multiple-reel film" [c.1912-1913].[9] When cinema buildings began to increase dramatically in size, the belief in a life-size image appears to have kept screens relatively small, even though the "stage opening" would be much larger. To deal with this optical or architectural anomaly, a trade journal advised in 1909:

> To our mind, something in the nature of a compromise between the ordinary and moving picture stage is desirable. Let us imagine the ordinary stage opening [of] forty or fifty feet across [...]. But you do not want a picture that size. It seems to us that the best plan is to set the moving picture screen well back on the stage and to connect the sides of the house by means of suitably painted cloths or side pieces, so that when the house is darkened and the picture shown, the audience have the impression they are looking at the enactment of a scene set a little way back on the stage. They look at it, as it were, through an aperture or tunnel, at the side of which there is nothing to distract their attention [except] a design complementary to the picture.[10]

Fig. 6: Reynaud, Theatre optique, Musee Grevin.

Photographs of American theaters equipped to show moving pictures in 1913-1914 reveal two approaches. The American Theatre in Salt Lake City, seating 3000, appears to have had in effect two gilded frames, one bounding the actual screen, and around this a more ornate picture box frame, separated from the first by a black surround. Vitagraph's flagship New York theater featured a stage set representing "an artist's studio in lower New York," with a window behind which a screen was lowered to give the effect of a "window on the world."[11] At least two other American "palace" theaters of this era took up the idea of a "complementary design," with elaborate scenography involving pillars in Greek temple style and implied landscapes, framing the screen's "window."

Fig. 7: American lantern lecture.

In Britain, there were attempts around 1909-1912 to introduce "daylight projection," which would allow pictures to be shown with relatively strong ambient lighting, if the screen "were placed in a black-lined alcove."[12] In Britain, and possibly elsewhere, it also became usual for the screen to be hidden behind curtains when not in use for projection. This led to the convention of opening and closing the curtains, or "tabs" (following theatrical usage) at the start and end of a program, which was believed to enhance the sense of occasion surrounding a film show, and also perhaps to counter any sense of "flatness" or non-transparency associated with a "blank" screen. Meanwhile, in other cultures, such as France, the screen generally remained visible and was often mounted as a free-standing panel, drawing attention to its shape and edges. In the UK, masking was generally used to give a sharp edge to the film image, while in France and elsewhere, the image would be defined by the projector aperture plate, producing a "soft" edge on screen.

Fig. 8: Reconstruction of first Lumière screening, Salon Indien, Blvd des Capuchines [screen accurate?].

Perhaps the most lasting, yet also puzzling, legacy of early screen materials is found in the phrase "silver screen," which has survived especially in American English. American dictionaries confidently assert that it became synonymous with cinema itself, as in "stars of the silver screen."[13] There is certainly evidence from trade literature around 1913 that "silver" screens were available alongside "opaque and cloth" ones; and the value of these was obvious, since a silver screen increased "gain," or reflection back from the screen, thus giving the appearance of a brighter picture. The problem, however, was that beaded silver screens were only effective for viewers seated centrally, so that "in wider theatres they give poor performance," as a later review noted.[14] There is some evidence from trade literature that silver screens were considered "normal" during the 1910s, but how widespread they were and when they disappeared has proved difficult to establish.[15] Why this particular form of screen should have become paradigmatic, or metonymic, in Anglo-Saxon culture remains unclear, but hints at an intriguing dimension of cinema's allure as something precious.

Fig. 9: Early Lumière poster.

The majority of screens in fact appear to have been made from white cloth, and one of the largest screen suppliers, Harkness, provides an account of the company's beginnings in 1929:

In those days "cloth" screens were fashioned from a cotton muslin type material which was webbed, eyeletted and stretched across wooden frames on the front wall of the auditorium. The ability to produce a reliably seamed screen large enough to do the job being the key factor.[16]

An urgent and universal priority for much of the 20th century was maintaining the whiteness of cotton muslin screens when the majority of cinema audiences smoked continuously, and ventilation was often minimal. Apparently Tom Harkness "developed business relationships with laundries who could wash the screens, and sold cinemas with the idea of having multiple screens so that they could have one laundered while another was in use."[17] Harkness also apparently saw the opportunity to sell screens shrunken by repeated washing to smaller cinemas. But the 1940s saw the gradual introduction of plastic screens, which were more resistant to nicotine staining, and also able to be invisibly perforated.
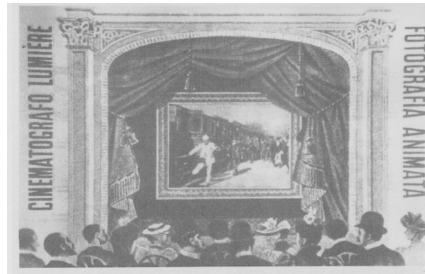
Fig. 10: First Lumière screening in Italy, Turin (1896).

The arrival of synchronized sound at the end of the 1920s had created a problem that was not solved until two decades later. Most cinemas installed loudspeakers on either side of the screen, where they remained until the 1950s. This was when perforated screens were introduced in the United States, allowing speakers to be located behind the screen and producing a better directional illusion of synchronized sound and image. This also helped hide the increasingly large speaker array used for stereophonic sound. During the 1950s, screens become a focus for conspicuous innovation as the cinema industry faced competition from television and other forms of entertainment. Much of this was concentrated on their scale and shape in relation to the auditorium. A number of large-scale formats had been used experimentally in the late 1920s on both sides of the Atlantic, notably in Abel Gance's "Polyvision" for the triptych sections of his NAPOLÉON (1926) and Fox's 70mm "Grandeur" format, used for a handful of films in 1929. Sergei Eisenstein proposed a variable "dynamic square" in a lecture to the Academy of Motion Picture Arts and Sciences in Los Angeles in 1930, developed in an essay the following year.[18] But in the 1950s, most attention was paid to

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creating a horizontally wider surface, which was ideally curved to enhance the stereoscopic effect of such "anamorphic" systems as CinemaScope. Where it was architecturally possible, screen size was increased, but this had to become variable, usually through motorized masking, as showing films in different aspect ratios became normal.

The CinemaScope format was promoted by Fox, and triumphed among its competitors, because of its cheapness. "Only" lenses were required, according to an early promotional article, although the screen had to be "solid," to maintain its curvature. Other enhancement processes were certainly more complex. 3D required the synchronization of two projectors and wearing glasses, and the attempt to launch it in Hollywood collapsed after four years.[19] The Russian stereoscopic cinema system enjoyed wide success during the 1940s, and involved building special cinemas with "raster" or lenticular screens. Seeing the first Russian 3D feature film, Robinson Crusoe (1946), led Eisenstein to proclaim that the future of cinema would "inevitably" be stereoscopic.[20] Meanwhile, 3D's main Western rival, Cinerama, offered a truly immersive panoramic image, created by three projectors, and a special constructed screen. This consisted of hundreds of individual vertical strips of perforated screen material about 22 mm wide, each angled to face the audience, to prevent light scattered from one end of the deeply curved screen from washing out the image at the opposite end.
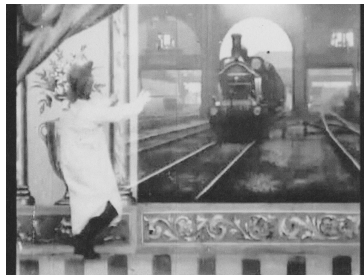
Fig. 11: *The Countryman and the Cinematograph (Robert Paul, 1901).*

Despite its success as spectacle, Cinerama did not secure a permanent niche in the entertainment economy, and other large-screen formats of the 1950s, such as VistaVision and Todd-AO, similarly failed. But the new emphasis on immersive experience, deriving from an enlarged screen, focused attention on a fundamental aspect of screen performance. Traditional matt screens "scattered" light reaching them, thus reducing overall brightness of the image. By contrast, a coated screen could offer "gain" by reflecting light back to the audience. Harkness would introduce their "Perlux" range of screens with different reflectance levels, which serve to optimize projector lamp use, as expensive Xenon lights became standard.

The most recent chapter in the history of screen materiality involves a return of the aspiration that motivated many 19th-century pioneers, who believed that moving pictures could and would inevitably be stereoscopic. After fitful, though successful, demonstrations of two-strip 3D at expositions such as the 1939 World's Fair in New York and the Festival of Britain in London in 1951, the advent of digital projection in the 2000s made possible a new era of secure presentation. The launch of James Cameron's AVATAR in 2009 persuaded a critical mass of exhibitors to equip for digital projection which could also deliver 3D. This involved a single projector that could project both right-eye and left-eye images, alternating between these 144 times per second, and thus obviating synchronization. Silver screens have also been revived, to counteract the reduced illumination of 3D projection.
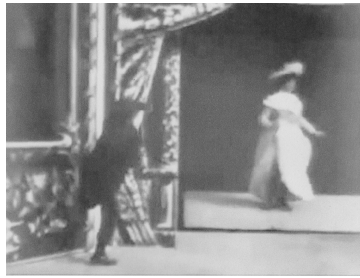
Fig. 12: *Uncle Josh at the Moving Picture Show (Edwin S. Porter, 1902).*

Another return has been to the giant screen first used by IMAX in its early presentations at expos in Montreal (1967) and Osaka (1970). During the Spokane Expo '74, IMAX presented its single-image film on a screen measuring 27 x 20 meters, which exceeded the visual field of all spectators by means of a carefully designed theater. Since embracing digital projection in 2008, IMAX has experienced a renaissance, with many spectators preferring to see other spectacular films in an IMAX theater, in order to experience its attention-filling effect.

Fig. 13: *Those Awful Hats (D.W. Griffith, Biograph, 1909).*

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Fig. 14: *Tillie's Punctured Romance (Mack Sennett, 1914).*

The range of screen materials used today has also expanded considerably, with manufacturers offering sophisticated combinations of highly reflective surface on a flexible backing.[21] Yet the basic principles of screen construction and the requirements of reflectivity for the audience have remained broadly similar to those of the earliest projection screens – even before these had moving pictures projected on them. The contemporary screen is closer to its ancestors of over a century ago than any other aspect of moving image display. And in its largest manifestations, such as IMAX, it evokes one of cinema's spectacular ancestors, the painted Panorama, now offering this in vividly immersive form through modern versions of the lantern medium of projected light.[22] Marshall McLuhan's concept of new media embodying a "change of scale" and containing their precursors as "content" seem highly relevant; as do Bolter and Grusin's observations on "remediation."[23] Strangely, however, the "invisible" materiality of the screen that makes possible an enlarged image has remained an integral part of our culture for at least four hundred years.[24]

PART II

Technology and New Practices

Scaling Down: Cinerama on Blu-ray[1]

Ariel Rogers

> Cinerama was not meant to be competitive with conventional movies,
> and it certainly could never be shown on television.
> – Hazard Reeves, president of Cinerama, Inc.[2]

The introduction of the Cinerama system, with the premiere on September 30, 1952 of THIS IS CINERAMA, ushered in a period of upheaval in American cinema marked by experimentation with technologies such as widescreen, 3D, and stereophonic sound. Although the film industry had a complex relationship with television exceeding simple competition, public discourses pitted the sensory plenitude offered by the new movie technologies against the reputed deficiencies of the small screen.[3] Cinerama produced its novel spectacle by overhauling approaches to both production and exhibition, making these two components so inextricable from one another that Cinerama films' migration to television seemed next to impossible.[4] Marketing for the system emphasized its theatrical installation as a major component of its appeal, insisting that elements of that installation such as stereophonic sound and, especially, the large, curved screen offered viewers an experience of "participation" unavailable elsewhere.[5] Not only were the films made in a process that utilized three filmstrips simultaneously, requiring a three-projector Cinerama set-up for exhibition, but they self-consciously displayed the large screen and stereo sound constituting that set-up.

   The recent release on DVD and Blu-ray of the 1950s Cinerama films makes sense insofar as it has capitalized on painstaking restorations and made historically significant films widely available for the first time, pairing what had been a particularly high-resolution film format (Cinerama) with a video format (Blu-ray) noted for its own high resolution.[6] But given the apparent inextricability of these films from an exhibition context conceived in contradistinction to television, the platform for which the new discs now paradoxically destine them, their release on home video is also perplexing.[7] Even the best-equipped contemporary home theater systems – and even those featuring large, curved screens echoing the equipment associated with 1950s widescreen exhibition – do not come close to matching the massive size (64 feet by 23 feet at the system's debut) or deep curvature (to a depth of about 25 feet) of Cinerama's screen.[8] Moreover, the Cinerama discs enter a media landscape marked equally by the increasingly small

screens of mobile devices. This essay explores the implications of Cinerama's migration to this new media environment. Although the Cinerama films' release on home video seems perverse, I will argue that it casts new light on Cinerama and, more broadly, illuminates the variety of ways in which movies operate in conjunction with the screens displaying them.

Scholars confronting the diminutive screens that have proliferated since the turn of the millennium have shown how the material qualities of exhibition contexts, including, in particular, the scale of screens, shape films' functions and viewers' experiences.[9] That insight is particularly apt in addressing Cinerama, given the importance of the large screen to its conception and use. Indeed, scholarship on widescreen cinema has emphasized the ways in which the new screens' role in exhibition affected film style and transformed cinematic experiences.[10] These observations might seem to recommend dismissing the Cinerama videos outright since they extract the films from the large theatrical installations for which they were made and transplant them to a dramatically different context marked by much smaller screens. However, recognizing the importance of the material dimensions of exhibition does not preclude taking home video seriously as a format that contributes to, rather than simply undermining, cinematic experiences.[11] Expanding beyond an attention to scale and exploring the heterogeneous functions of both the Cinerama screen and the domestic and mobile screens now capable of displaying the films uncovers continuities and modulations among them. As Haidee Wasson contends, film "is productively understood as a family of technologies, an assemblage of things and systems that are multiply articulated across its history and its contexts," and the screen itself "is but one part of this shifting assemblage, a telling portal to a range of creative languages, modes of performance and display, contexts of exhibition, and audience formations."[12] As parts of that shifting assemblage, both the Cinerama screen and the contemporary video screens now featuring the films have multifaceted functions, informed but not exhausted by their scale.

Anne Friedberg's conception of the forms of spatiality structured by screens offers a way of parsing these functions. Outlining a notion of spectatorship that "emphasizes the relation between the bodily space inhabited by the spectator and the virtual visuality presented on the space of the screen," she shows how the material dimensions of the screen collaborate with the immaterial images projected upon it, forming particular conjunctions of actual and virtual cinematic space.[13] In what follows, I map such conjunctions by highlighting several forms of spectacle recurring in the Cinerama films and exploring how they worked in tandem with various material qualities of the Cinerama screen – including its size, curvature, aspect ratio, and collaboration with the three projectors filling it – to construct particular forms of cinematic space. The conjunctions I identify are not exhaustive, and my focus on the screen bypasses the detailed exploration of sound that the films' deployment of stereo technology merits. My goal in high-

lighting these resonances is to elucidate some of the multiple ways moving images took shape on mid-century theatrical screens. Doing so exposes tensions and rifts even within what seems like a particularly unified configuration of the cinematic apparatus, showing how even the tightly bound Cinerama system functioned within a variegated web of discourses and practices. Such an exploration reframes Cinerama by positioning it within a nexus of media histories, ranging from the genealogies of immersive media and kinetic entertainment within which it is usually included to histories of nontheatrical and experimental media practices associated with multiple-screen and split-screen displays.[14] It also suggests ways of nuancing our understanding of films' migration to new platforms, cautioning against a straightforward distinction between earlier and contemporary screens along the lines of scale and highlighting the ways in which other aspects of the screen, such as its functions as surface and frame, endure its transformations.[15]

The Cinerama System

By the time Cinerama debuted in 1952, its inventor, Fred Waller, had been working on it for decades: he designed several multiple-projector systems, including 11-projector and 7-projector systems, in the 1930s as well as a 5-projector system to train American machine gunners during World War II.[16] These experiments were driven by Waller's conviction that stimulating viewers' peripheral vision enables them to experience images more realistically, supplying the sensation of three-dimensionality.[17] Also devised with this idea in mind, the Cinerama system was further streamlined, featuring three projectors throwing three contiguous images onto a large, deeply curved, louvered screen. In production, three-lensed cameras were used to expose three 35mm strips of film simultaneously, with each frame extending six perforations high rather than the usual four. The use of three separate filmstrips, each with an expanded frame size, produced images of very high resolution, even when projected on large screens. A slightly higher frame rate than usual (26 frames per second rather than 24) further contributed to the clarity of Cinerama's images. The Cinerama system paired these images with seven-track stereophonic sound. In the theater, five speakers were spread out behind the screen, with additional speakers at the sides and rear of the auditorium. In production, up to seven microphones were arranged, in Waller's words, "in the same relationship to the scene being photographed as the speakers were to the scene when projected."[18] This setup allowed sounds to move across the span of the screen and to the offscreen spaces to the left and right of it; it also made it possible for sounds to travel from the rear of the auditorium toward the screen.[19] The advertised effect was one of unprecedented audiovisual engulfment: the system was heralded as offering viewers the feeling of being within the field of action. Ads, for instance, proclaimed, "You

won't be gazing at a movie screen – you'll find yourself swept right into the picture, surrounded with sight and sound."[20]

The films themselves anticipate the theatrical installation. There were five Cinerama films made in the 1950s: THIS IS CINERAMA (1952), CINERAMA HOLIDAY (1955), SEVEN WONDERS OF THE WORLD (1956), SEARCH FOR PARADISE (1957), and SOUTH SEAS ADVENTURE (1958). All are travelogues, and although some experiment with characters (whom we follow on their travels), the films are predominantly non-narrative and focused on presenting astonishing sights. Marketing for Cinerama touted the idea that the Cinerama camera – with its multiple wide-angle lenses, its access to aerial perspectives, and the institutional privilege of its operators – gave viewers unprecedented views of the world. For instance, souvenir programs for THIS IS CINERAMA claimed that Cinerama made it possible to see "the world through new eyes."[21] With familiar landmarks, this entailed offering better views than tourists could achieve, such as a flight under the Brooklyn Bridge or the view of an opera at La Scala from the edge of the stage. More pervasively, and especially in the later films, it also meant offering access to sights that viewers had little hope of encountering first-hand, such as views into the lives and rituals of indigenous peoples in Africa and the Pacific Islands, which the films present through an assertively colonialist lens. With its advertised immersive effect, the Cinerama system promised to give viewers a remarkable sense of presence and thus offered the opportunity to experience these sights as if in person.[22] In this way, Cinerama aligned itself with a long tradition of immersive media offering an experience of virtual travel.[23]

The spectacles on display in these films can generally be classified according to four overlapping categories. First, there are spectacles of grandeur, ranging from the natural grandeur of vast land-, mountain-, and seascapes to the cultural grandeur (especially in the first three films) of massive and ornate architecture in world-famous settings. Second, there are spectacles of kinesis, as the Cinerama camera (often surveying the aforementioned land-, mountain-, and seascapes) soars through the sky in airplanes; speeds across land and sea aboard trains, cars, boats, and sleds; mounts carnival rides; lumbers atop an elephant; and simulates a leaping kangaroo. Third, there are spectacles of performance, upon which the Cinerama camera offers viewers a privileged perspective, often positioned either in the front row or in the midst of the performance itself. Finally, there are spectacles of technological achievement, ranging from the display of Cinerama as a technological achievement itself to the films' pervasive enthusiasm for aviation technology. These two technological wonders are often celebrated in tandem, as is emblematized by the shadow of the plane carrying the Cinerama camera that is frequently visible superimposed on the landscapes being filmed. The films harness these spectacles of technological achievement as evidence of the modernity and power of the United States.[24]

Spectacles of Grandeur, Spectacles of Kinesis, and Screen Scale

The films' spectacles of grandeur and kinesis are the most recognizable elements of the 1950s Cinerama productions. In his review of THIS IS CINERAMA, appearing on the front page of the *New York Times* the day after the film's premiere, Bosley Crowther, for one, observed that "the most spectacular and thrilling presentations were those that combined magnificence of scenic spectacle with movement of an intensively actionful sort."[25] These scenic and "actionful" spectacles are tightly bound to the most prominent component of the Cinerama installation: the large screen. When projected on this gigantic platform, the landscapes featured in the films evoke the sublime in much the same way that IMAX does.[26] The spectacles of kinesis also achieve their visceral effect through projection on the large screen, which allows the rush of sensations to reach viewers' peripheral vision – the primary source, according to Waller, of people's perception of their position in space.[27] The many landscape shots in which the camera cants back and forth (usually as the plane carrying it banks left and/or right), making the pictured horizon slant dramatically, bring together these two spectacles in anticipation of large-screen projection that would both evoke awe at the vastness of the imagery and provoke a visceral feeling of motion. Moreover, such images, when projected at their intended scale, offered viewers a particular kind of encounter with geopolitical space. The massive projection of the films' spectacles of grandeur and kinesis, as well as technological achievement – coming together especially forcefully in THIS IS CINERAMA's culminating "America the Beautiful" segment, which features an aerial tour of the American landscape – at once elicited awe for the United States and encouraged viewers to align themselves with its power. Indeed, the overwhelming scale of the Cinerama spectacle, particularly paired with the visceral effect and nationalist messages of the films, contributed to the system's deployment as a vehicle of propaganda for the United States (the Soviet Union's version of the system, Kinopanorama, served a similar function).[28]

These effects are, of course, transformed significantly when pictured on the smaller scale of domestic or mobile screens. The result is similar to the experiment Haidee Wasson describes of showing her students the IMAX film EVEREST (1998) in a large auditorium on a 27-inch screen: "If IMAX-as-IMAX can be thought of as a meditation on the gigantic, then IMAX-as-TV becomes a tortured forty-five minutes of trite narration, staid framing, and orientalist thematics. [...] As an aesthetic and an experience, IMAX is made qualitatively different by a small screen."[29] Similarly, the spectacular nature of the Cinerama films' landscapes is greatly diminished on home screens, no longer eliciting the sense of infinity and exteriority that, as Susan Stewart argues, is often associated with the gigantic and displaying instead the contained and domestic nature that she attributes to the miniature.[30] Additionally, when presented on the smaller scale of televisions, the

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films no longer activate the viewer's peripheral vision, a difference that profoundly affects the impact of the films' moving shots. All of those canting horizons, for instance, no longer provide a viscerally rattling experience, instead becoming an intellectual curiosity. The losses accrued in transferring big-screen spectacles of the 20th century to the increasingly small screens littering the 21st are by now well-recognized enough to have become the stuff of jokes, as David Sterritt exemplifies when he concludes his review of the Cinerama videos by admonishing readers, "Just don't watch these on your cell phone. This is *Cinerama* after all."[31]

Spatial Continuity and Spectacles of Performance

Cinerama did more than simply increase the size of the cinematic platform, however. A related but distinct function of the Cinerama installation was its creation of a sense of continuous space spanning built and represented realms. The scale of the Cinerama screen was only one factor contributing to this reconfiguration of cinematic space. In Cinerama systems, the screen's scale worked in tandem with its curvature and positioning within theaters to blur the boundaries between image and theater space. The size of the screen pushed its frame to the far reaches of viewers' peripheral vision, downplaying awareness of its edges; its curvature made the image itself three-dimensional, reaching into the theater space and seemingly encircling viewers in filmed images; and guidelines for its installation had it placed in front of ornate proscenia, obscuring an element of theater space that might distract viewers from the onscreen spectacle. The sound system aimed for a similar effect, with the speakers arrayed throughout the auditorium blurring any boundary between the sonic spaces of the spectacle and the theater. The sense of spatial continuity evoked by this installation contributed to the idea that the system proffered an experience of engulfment, seemingly positioning viewers within the films' diegetic space.[32]

Certainly, the films' spectacles of grandeur and kinesis capitalized on this sense of spatial continuity, inviting viewers to enter exotic landscapes and to feel themselves thrusting forward into diegetic space aboard speeding vehicles. However, the films' spectacles of performance are designed both to harness that sense of continuous space and to bolster it in a way that merits special consideration. Particularly notable is the fact that most scenes featuring performances utilize diegetic audiences to enhance the sense of spatial continuity evoked by the system, further blurring the boundaries between represented and actual space. These diegetic spectators function in an analogous way to the staffage figures placed in the foreground of landscape paintings, beholding the view, that, as Tom Gunning argues, "inaugurate imagined narratives of entrance into the represented space."[33] The diegetic audiences in the Cinerama films, presented in configurations that closely mirror those of the films' own audiences,

also suggest a shared audience space spanning represented and actual realms. In doing so, they muddy the distinction between viewer and viewed by resisting relegating them to different sides of the screen. By aligning its own viewers with Spanish observers filmed at an outdoor flamenco performance, for instance, THIS IS CINERAMA (rather disingenuously, considering the spectacular display of the system at other points) suggests that the object of view is not the film (which the flamenco audience cannot perceive) but rather the dance (which both sets of viewers see). When exhibited in Cinerama, such a moment creates a sense of continuity between built and pictured spaces populated by actual and filmed spectators, transgressing the screen plane: it is as if the film's viewers sit within the flamenco audience.

Such moments highlight a function of the Cinerama screen distinct from its scale. The pervasive use of diegetic audiences calls attention to the screen's function as a surface. Specifically, such scenes present the Cinerama screen surface as a penetrable membrane, not only a window upon a world but a portal into it. In doing so, they retroactively suggest that traditional screens acted as a barrier to that world.[34] Although the large size of Cinerama's screen contributed to this function by moving the frame outside the viewer's central vision, the sense of awe and the sensation of motion activated by its scale are less important to these spectacles of performance than is the way in which the screen, as a penetrable surface, reframes the relationship between two-dimensional and three-dimensional space.[35] In a converse movement to stereoscopic 3D, which transgressed the screen plane by bringing the cinematic spectacle into the theater space, the Cinerama screen, as William Paul has argued, invited viewers into the depths of diegetic space.[36]

Contemporary domestic and mobile screens are not as physically immersive as was the Cinerama screen. As John Belton puts it, the "engulfing experience" of viewing widescreen films "on wraparound theater screens bears little or no relation to the experience of seeing them on a television screen, even in their proper aspect ratio."[37] The experience of immersion can be recreated in other ways; as Barbara Klinger contends, for instance, discourses on home theaters have insisted "on the home's ability to compete with the theatrical experience," presenting "the movie house as the uncontrolled environment riven with distractions" and allowing the home entertainment center "to epitomize the possibility of a stress-free, quiet, and unimpeded rapport with the screen."[38] However, because most domestic and mobile screens are not integrated into their setting as thoroughly as the Cinerama screen's size, curvature, and architectural dominance allowed it to be, the Cinerama videos' represented space does not structure viewing space in the way the films anticipate. As a result, elements of the films that capitalize on this structuring, such as the depicted audiences, risk losing their meaning (or seeing it fundamentally transformed) when divorced from a Cinerama installation.

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The Cinerama discs register this risk by representing a Cinerama installation – something that distinguishes these videos dramatically from most others and attests to the ways in which these films are especially bound to their original exhibition context. The videos include elements that might be considered para-textual, such as overture, intermission and exit music, which had been independent of any cinematic image. Most striking is the decision, during these periods, to portray components of an actual theater space, proscenium curtains, which were filmed on location at the Cinerama Dome in Los Angeles.[39] The curtains remain during the Academy-ratio prologues with which most of the films start, before they open to reveal the wide frame and subsequently dissolve away. They return at intermission, opening and again dissolving with the resumption of each film.

Fig. 1: The curtains part to expose the width of the Cinerama frame in SEVEN WONDERS OF THE WORLD (Cinerama, Inc., 1956/Cinerama, Inc. and Flicker Alley, 2014).

These theatrical trappings indicate the films' inextricability from Cinerama's mode of exhibition at the same time that they mark the discs' inability to recreate it. Even after the curtains disappear from the frame, the black spaces at the top and bottom of the image created by the "Smilebox" letterboxing format meant to simulate a curved screen, unlike standard letterboxing, gesture toward an intended three-dimensional theatrical installation and, at the same time, assert its absence. Thus, even when the filmed trappings of the Cinerama Dome are no longer present, the semicircles of black at the bottom and top of the frame, though obviously confined to the vertical plane of the television screen, simultaneously continue to suggest a horizontal theater floor and ceiling.[40] That these

do not map onto the floor or ceiling of the videos' viewing space further indicates the films' uneasy fit in their new environment.

The films' pictured audiences inhabit this new form of display in an ambiguous way. On one hand, their significantly reduced size and confinement not only within the framed view of a television screen, but also within the even more restricted space of the "Smilebox" frame, make the pictured spectators look more like the inhabitants of a diorama than members of the same audience as the film's viewer. And the black semicircles created by "Smilebox" letterboxing, frustrating the sense of shared three-dimensional space, serve as constant reminders that the pictured audience space is discontinuous from the viewer's own. On the other hand, these diegetic observers continue to invite viewers, like the staffage figures discussed by Gunning, to enter diegetic space, gesturing, even in the videos, toward the form of continuous space evoked with a Cinerama installation. Even though the screens on which they now appear most often do not enhance this sense of spatial continuity in the way Cinerama screens did, the diegetic viewers nevertheless continue to serve as a bridge between physical and represented space by relocating the distinction between viewer and viewed away from the screen plane and into the deep space of the diegesis, thus presenting the screen surface as a threshold rather than a barrier.

The video presentation sets up more obstacles to crossing this threshold than did the theatrical installation, especially since the "Smilebox" letterboxing, when viewed on a flatscreen television or mobile device, constantly confronts the illusion of a three-dimensional installation with the reality of a planar screen. The effect can be distancing, reminding the videos' viewers that they are not experiencing the films in their intended manner. However, that play between screen surface and three-dimensional space only exacerbates a tension that was fundamental to Cinerama to begin with. Indeed, the videos multiply such surfaces (the actual television screen and the represented Cinerama screen) and spaces (the actual viewing space of the videos, the represented Cinerama viewing space indicated by the black semicircles in the videos, and the represented viewing spaces populated by diegetic audiences in the films), conveying not only the distances between the spaces mediated by these surfaces but also the persistent drive to bridge them. With Cinerama, the prospect of bridging actual and diegetic viewing spaces entailed a promise of greater authenticity, aligning the cinematic experience of viewers on one side of the screen with the experience of live performance attributed to the represented viewers on the other side. With the videos, the prospect of bridging these spaces also involves a promise of greater authenticity; however, here the depicted theatrical exhibition of Cinerama emerges, together with the portrayed experience of live performance, as a model of such authenticity.

Windows as Spectacles of Technological Achievement

Certain examples of what I am calling the films' spectacles of technological achievement work in strikingly similar ways to the diegetic audiences populating the spectacles of performance. There are several instances across the films in which the Cinerama camera shoots through windows or sets of windows that echo the aspect ratio, segmentation, and (often, though not always) curvature of the Cinerama image itself. Such shots act as spectacles of technological achievement in which the films echo and celebrate Cinerama projection itself as a technological wonder. As a prominent metaphor for the screen, the window is often taken as a figure of transparency; however, as Anne Friedberg notes, windows, like screens, act simultaneously as openings, boundaries, and delimitations of a view.[41] Rather than simply affirming the realism of the Cinerama image, the windows appearing in the Cinerama films, like the diegetic audiences, function in tandem with the system's installation to portray Cinerama as a feat of spatial synthesis that achieves a sense of continuity between actual and represented space.

The use of windows is most striking in CINERAMA HOLIDAY, which features a scene in which the Cinerama camera, together with the Swiss couple it is tracking, travels in the California Zephyr train's "vista dome," which reveals panoramic views of the American landscape through curved, glass panels whose shape and sectioning evoke Cinerama projection. At two other points in the film, we see the characters framed in front of large plate-glass windows whose three panels divide the views beyond (of San Francisco and, later, Paris) in another echo of Cinerama's triple-projector display. In SEARCH FOR PARADISE, the Cinerama camera presents the view of an airport runway from behind a similar set of windows, which spectacularly shatter as jet airplanes speed by, presumably producing a sonic boom. In another trope displayed in these films, the camera presents views from within cars and planes, displaying a front windshield flanked by side windows.[42] Not only do the multiple window panes in these shots reflect the three panels constituting the Cinerama image, but the angle at which the windows sit echoes the curvature of that image and its constitution from three separate views taken and projected at angles from one another. Like the operators of these vehicles, Cinerama viewers see the landscape passing not only in front of them, but also to their left and right.

Fig. 2: The plate-glass window echoes Cinerama projection in Cinerama
Holiday *(Cinerama, Inc., 1955/Cinerama, Inc. and Flicker Alley, 2013).*

Insofar as they serve as figures for the Cinerama screen displaying them, these pictured windows work to align the virtual vistas projected on that screen with actual vistas as apprehended through transparent glass. For instance, when Cinerama Holiday presents views of Paris through the windshield of a speeding taxi, it analogizes its own presentation of Paris to the view an actual tourist would have when looking through such a windshield. In addition to conveying the authenticity of the Cinerama image, these windows, like the films' diegetic audiences, also suggest that the boundary between viewer and viewed might be placed somewhere other than the screen plane – in this case, at the plane of the pictured window. The representation of the window as a boundary, in other words, downplays the screen's function as such. In this way, these spectacles of technological achievement, like the film's spectacles of performance, work together with the system's installation to convey continuity between viewing space and image space, aligning the viewer's own environment, for example, with the interior of the Paris taxi.

As with the films' treatment of diegetic audiences, the effect of the windows' migration to home video is ambiguous. On the one hand, smaller screens attenuate the effect of the through-the-window shots by failing to reproduce the experience of immersion evoked by the Cinerama installation: it is hard for viewers to ignore the material presence of a screen whose frame occupies their central field of vision, especially if they hold it in their hand. Moreover, the kinetic effect of moving shots, displayed through windshields, diminishes when, on home screens, motion no longer surrounds the viewer. On the other hand, the

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windows' appearance on television screens continues and extends the play between surface and depth that I discussed earlier. As with the films' depictions of diegetic audiences, the migration of these through-the-window shots to the "Smilebox" frame not only creates a new rupture between viewing and image spaces but also works to bridge those spaces in a way that echoes the functioning of Cinerama itself.

Francesco Casetti's notion of relocation offers a useful way of approaching this ambiguity. As Casetti argues, relocated cinema works in two ways, which reflect cinema's dual function as both a product and a form of use. On the one hand, the home video version of a film operates as a "relic" insofar as it embodies a displaced fragment of the production. On the other hand, a home theater functions as an "icon" insofar as it simulates a movie theater, reactivating "the presence of the model, even as it simultaneously draws attention to the model's absence."[43] The Cinerama videos are unusual in that they not only operate as relics (maintaining some component of the films' image and soundtracks) but also themselves take on an iconic function through their simulation of the movie theater – the latter fact an indication of the particular inextricability of product and use in the case of Cinerama. When watching these videos in their own home theaters, viewers encounter double theatrical icons, their living room space replicating, more or less faithfully, general notions of the movie theater (as dictated by choices relating to ambient illumination, screen size, speaker arrangement, etc.) and the films simulating a particular Cinerama installation (through the representation of curtains and floor space).

In this sense, the discs echo the way in which the Cinerama films themselves treated windows, the Cinerama-screen-within-the-television-frame serving, like the windows-within-the-Cinerama-frame, to convey a sense of proximity associated with a different, and supposedly better, viewing situation (the experience of a theatrical Cinerama presentation or the view through an actual window). Both the Cinerama films themselves and their home video versions work in this way as well to reconfigure the relationship between diegetic and spectatorial space by evoking a model portrayed as more authentic. At the moments in which the videos portray the windows, like the moments in which they portray diegetic audiences, this occurs two times over: the television screen conjures but fails to duplicate a Cinerama screen, which conjures but fails to duplicate a window or live performance. At the same time that such moments make us recognize what is lost in compressing a Cinerama theater to fit within the confines of a television screen, they simultaneously update a gesture already enacted in the films, allowing the theatrical presentation of cinema to play a role previously ascribed to windows and live performances. Whereas the Cinerama screen, in the 1950s, forged novel forms of spatial synthesis by evoking the figures of window and stage, the screens displaying the videos create new forms of synthesis by evoking what is now the older model of the Cinerama screen.

Split Screens as Spectacles of Technological Achievement

The windows-within-the-screen in the Cinerama films function not only as views into other represented spaces (where the view through the window evokes that provided by Cinerama itself) but also as part of a graphic logic emphasizing frames-within-the-screen. Notably, Anne Friedberg, while acknowledging that Cinerama was predominantly used to "give the illusion of an expansive, continuous panoramic display," includes it in her discussion of the contemporary trope of multiple virtual windows, in this case aligning it with multiple-screen and split-screen displays.[44] The methods the films employ to hide or downplay the seams between the three images filling the Cinerama screen often produce tripartite compositions that map onto the multiple projections constituting them.[45] What David Sterritt describes as the films' "obsessively symmetrical framings" serve not only to emphasize "the center and [keep] the seam lines clear" but also to create a graphic regime organized around three adjacent but distinct panels – each, as David Bordwell points out, often with its own vanishing point.[46]

Architectural elements, such as pillars, are frequently aligned with the seams between the images, segmenting the *mise-en-scène* in a way that simultaneously reflects and naturalizes the triple projection. The windows mentioned earlier support this graphic regime by working as another element of the diegetic architecture that downplays the seams by trisecting the frame (aligning the image's seams, in the case of several such shots, with the spaces between the represented windows). Even more blatantly than the scenes relying on other elements of architecture, the window shots simultaneously operate as instances of split screen, bringing together different views, shot from different angles.

The films also include sporadic but significant instances of straightforward split screen, recalling Abel Gance's deployment of triple projection for spatial montage at the end of Napoléon (1927).[47] The first of these occurs in the culminating segment of the Cypress Gardens sequence in This Is Cinerama, which breaks the panoramic screen into three different, framed images (one per projector), spatially juxtaposing what might be deemed "best-of" moments from earlier in the sequence. Here, the split screen recycles and brings together shots we have already seen, featuring waterski performances, motorboat stunts, and glimpses of female performers changing. While deployments of split screen in narrative films often convey temporal simultaneity, the images spatially juxtaposed in This Is Cinerama, as we know since they repeat earlier moments in the film, represent different points in time, uniting spectacular highlights of the aquatic show in a way that aims, ultimately, to multiply their affect, driving home the point that Cypress Gardens has presented an abundance of good, clean, American fun. The display of triple projection – and with it, the emphasis on the expanse of the screen – simultaneously flaunts Cinerama itself as the technological wonder making this spectacle of abundance possible.

Fig. 3: Split screen shows students across the Outback participating in a school play in South Seas Adventure *(Cinerama, Inc., 1958/Cinerama, Inc. and Flicker Alley, 2013).*

South Seas Adventure utilizes split screen somewhat more conventionally, juxtaposing simultaneous events occurring in different diegetic spaces. Its split-screen sequences, also occurring toward the end of the film, take place in a segment that follows a father-daughter family transplanted to Australia from what the narrator describes as "troubled Central Europe." The pair encounters their new home in the vast Outback, where children participate in a "school of the air" that congregates far-flung students via transistor radio. The film uses split screen to present the school play, in which each student wears his or her own costume in his or her own house, participating via radio on what the film identifies as a 300-mile wide stage. Later, split screen returns in presenting the simultaneous activities as an injured boy awaits medical help and the doctor on call rushes, by airplane, to his aid. In both cases, split screen offers a visual representation of the work done by the transistor radio and airplane in reconfiguring the geography of the Outback for what is portrayed as a dispersed, yet interconnected community indebted to cutting edge technologies. Like the split-screen sequence in This Is Cinerama, the sequences in South Seas Adventure also present Cinerama as a powerful technology capable of reconfiguring space and time into novel syntheses, putting such an achievement in the service of national (in this case, Australian) pride.

Whereas an emphasis on screen scale aligns Cinerama with notions of audio-visual immersion and illusion that can seem at odds with the small size and cluttered environments of domestic and mobile screens, the multiple images

and split screens also characteristic of Cinerama are more easily aligned with the fragmentation, distraction, and surveillance often associated with the experience of contemporary media.[48] As Beatriz Colomina has shown, the latter qualities were already coalescing around the use of multiple-screen displays in the 1950s.[49] This is not to say that Cinerama fits more squarely within genealogies of multiple virtual windows than with those of massive panoramic views, nor that these lineages are mutually exclusive (quite the opposite). Rather, this exploration of the conjunction of Cinerama films and Cinerama platforms shows the multiplicity of media practices with which that system was in dialogue. Attending to the diverse functions of the Cinerama screen, as it intersects with the representational strategies of the films, guards against unduly privileging certain aspects of Cinerama (such as the scale of its images) over others (such as their proliferation).

Although promotional rhetoric for the Cinerama system encourages such privileging, the films make it difficult to maintain, especially when they are viewed through the lens of home video. Rather than simply transforming the films, the videos illuminate the various dimensions such transformations take when films are relocated from one exhibition context to another. The Cinerama films, created to be displayed on (and to display) a specific screen, expose heterogeneous ways in which moving images inhabit screens. These films collaborated with the Cinerama screen not only to evoke the sense of awe and sensation of kinesis associated with the scale of that platform but also to reconfigure diegetic and graphic space in a variety of ways. As Erkki Huhtamo indicates in aligning Cinerama with Disneyland and television as "new" cultural forms of the 1950s that "had to do with the metaphor of traveling and the corresponding redefinition and relocation of the travelling body," certain aspects of Cinerama's spatial reconfigurations were far less opposed to the experience of television than the promotional discourse suggests.[50] Here, what counts are not the dimensions of Cinerama or television screens, but rather the ways in which, as surfaces, they mediate particular spaces and, as frames, they delimit relationships within and among objects on view.[51] In this regard, the Cinerama videos, far from simply undermining the forms of experience associated with the widescreen format, provide a surprisingly fitting update.

ARIEL ROGERS

The Disappearance of the Surface

Simon Lefebvre

The 3D Screen

Several avenues of thought allow us to understand what one calls digital technology in cinema. I will define it both in relation to filming and screening in the digital format, and to additional technology, such as 3D and most of today's special effects and computer-generated images. When studying the aesthetics of digital technology in cinema, or more accurately, the perceptible manifestations of digital technology in cinema, the screen plays a central role. Indeed, at a time when 3D film screenings are commonplace, it is interesting to consider it as a new expression of a both old and common saying: *coming out soon on your screen.* Although this saying is still topical – it still describes each new release, each new film having the privilege of being projected in cinemas – history has now managed to go even further.

Coming out soon on your screen: this is precisely one of the objectives of 3D technology, the enjoyment of seeing the bodies and objects of the movie projected – not only on screen – but in the movie theater itself, onto spectators. How surprising it is also to see salient elements protruding from the sides of the screen. The intended effect is double and comes from a long-standing desire to perpetuate the feeling of sharing a space, that of the movie, a represented world or, rather – let us use this term again as it is *de rigueur* here – a *projected* world, within the space of the movie theater. In other words, it is an augmentation of the famous impression of reality which, from André Bazin to Christian Metz, has long defined the ambivalence between the absence and presence of the spectator, between self-forgetfulness and self-projection, between immersion and impregnation.

Despite this, 3D technology is still criticized as a form of cinema based on special effects, whose manifestations merely repeat, through a diminished viewing experience (eye fatigue, heaviness of some glasses, parts of the image split in two, a darker image, etc.), what was already there: depth of field, volumes, and immersion. These criticisms are both fair and inadequate. They are fair in the assumptions listed above; fair also because the massive democratization of 3D cinema is still new, as it dates from the beginning of the 2000s; fair

again as this technology is still in its infancy, although spectacular and used mainly in larger productions.

These criticisms are, however, inadequate when they claim or assume that the use of 3D technology and its effects is nothing more than an *additional* aid, an unnecessary addition, vain in its operation (or, as I said previously, a technology that intensifies, in an aggressive and monstrative manner, the intrinsic qualities of a film). One should rather consider how these criticisms refer to a new relationship between the spectator and the movie. 3D engages viewers, inviting them to do more than just watch a movie: to experience it in one way or another, through playful or sensory experiences. A form of singularity is indeed at work here, and it would be too convenient not to consider it, on the grounds that it is only a protuberance.

3D technology is indeed – and it is not the least of its features – the most directive technology there can be towards spectators, as it controls them, obliges them and reminds them of their place, as demonstrated by the information panels or the small videos, which, before each screening, warn viewers or ask them to wear their glasses. Moreover – but this is more of a promotional argument than a truly effective aspect in movies – 3D technology intends to engage spectators in the action unfolding before their eyes, under their noses. The most convincing examples can be found in the adverts shown before the film, which sometimes encourage us to naively and spontaneously reach out to catch objects that seem to float right under our noses.

Right before our eyes, right under our noses. Here is the tangible and measurable progress proposed by 3D cinema. What distance have we travelled so far then? One should take another look at the screen, which, seemingly harmless, is still facing us, ever-present but now blurred. The purpose of 3D technology, as I mentioned, is not so much to repeat, with other means, the conditions for immersion – although it tends to make this immersion very physical – but to pulverize the screen, its edges and its surface, its framing and its flatness. The screen is a wall to break down, the wall that one must shatter (i.e., the recurring gimmick of an object exploding and whose fragments move towards the face of the spectator). Another purpose, and therefore another movement, echoes the forgetfulness of the spectator watching the movie: it is now the screen that must be forgotten and, furthermore, the idea of a screen as a presence in the theater.

One observes that this new configuration, although it remains theoretical (the audience looking, as usual, in the same direction), generates a tipping point compared to what I mentioned previously. To the disappearance and withdrawal of the screen behind the volumes that flow out of it, echoes the physical and motivated engagement of the spectator. It is interesting to note that the environment for the screening of a 3D movie is completely unique in the history of cinema. If theaters dedicated to 3D are equipped with technology making it possible, this is the first time that the spectator must also be fitted with a device.

SIMON LEFEBVRE

It is not only the theater that is equipped (musical instruments were installed in cinemas for the very first public screenings), but the viewer is too.

The fact that the spectator must wear a device (glasses) is symptomatic of a form of cinema that no longer wants to settle for just a screen to watch, or to look at, but a world to explore (that of the movie) and a world to forget (that of the theater). The paroxysmal dream of 3D technology is not that of the faithful reproduction of relief, but rather that of the spectator as explorer, tearing him from his state of oblivion to make him physically take part in a sensory adventure. It is the perspective of a physical interaction with the movie, even fake, which is aimed at here. The impression of reality must therefore be complemented by another impression, that of *being there*, or *being part of it*. Such an objective cannot liberate itself from the material dimensions of the theater (the viewer is sitting among other spectators).

Therefore, the deployment of 3D technology, without claiming to offer a physical endurance of the seen world, tries above all to combine the space of the movie and the space of the theater, one in the other, one towards the other. One can also distinguish two dominant movements in 3D cinema, which I have already briefly outlined: one that intends to see the objects and the bodies of the movie invade the theater, and one that intends to see the spectator engage in the 3D dimension of the movie. Two meanings indeed, one consisting of seeing the movie taking on the dimensions of the theater, the other consisting of producing the semblance of a crossing point, a direct entrance into the film. These two cases both demonstrate, each in their own way, a desire to see the screen disappear or break up.

This desire to overcome the stiff resistance of the screen is not new. One must remember here the anecdote – clearly exaggerated, to the point of becoming an urban legend – of the first spectators who saw L'arrivée d'un train à La Ciotat (The Arrival of a Train, Louis Lumière, 1895) jump from their seats in fear of being crushed by the train hurtling towards them. As legendary as it is, this story – here the way the facts are recalled is more interesting than how they really occurred – already shows the desire to consider the boundary of the screen as porous, fragile, and passable. Between the movie and the theater, there is only a thin white membrane that even a slow moving train could easily tear.

When filming Hugo (2011), Martin Scorsese remembered this when he shot a train not only entering a station, but pulverizing it and landing with a crash on the platforms before crashing a few meters further onto the station forecourt. Filmed with miniature models against a green screen and then digitally processed in post-production, the scene, which is a clear homage to the movie of the Lumière brothers, humbly tries to highlight the importance of the film that inspired it. The aim is not to pretend to go beyond the screen by the demonstration of the force of obviously more advanced technology, it is mainly to say that digital technology in the broad sense can overcome many things, especially

physical, tangible, and real things. The movie screen is one of those things. Thus, the train in Hugo, launched at high speed, as seemingly sucked in by the movement of 3D, seems unstoppable. It inexorably moves forward within the set and even seems to invade the theater, destroying the Gare de Lyon in a chaos of pulverized real sets and pixels. In the end, the screen, as always, comes out unscathed.

There is therefore the old desire to merge the filmic and the spectatorial space. You may recall, for example, Last Action Hero (1993) by John McTiernan, a movie shot in 2D and on film, but in which coexist the two movements mentioned above, those in the theater populated by the objects in the movie and those in the movie as a territory to be explored by the spectator. The central location of the action being the movie theater, a young viewer is projected into the movie he is watching and confronted with fictional responses and rules that seem strange – to say the least – when applied in reality. Later in the film, the same character returns to the reality of the theater and his surroundings, accompanied by the fictional characters he has just met in the flesh. The boundary of the screen is therefore abolished by this back and forth interplay as we see the many anomalies and collisions caused by the incongruous and improbable meeting of two worlds, ours and that of the *other side* of the screen. Having benefited from the spectacular accidents caused by the interpenetration of two realities that are total opposites, one fictional, one real, the movie ends with a return to order, the return of everything into its right place, as it were, on either side of the screen. The spectacle can only exist if there are spectators, this could be the final word of the film, a screen open to the elements bringing only the chaos of conflicting rules.

The paradigm of the theater/movie must therefore once again be considered here in tangible and material terms, the screen representing what separates the two terms, the two places. The screen as a thing that shows and a thing that hides, as an open window onto the world (to use Bazin's words) and as an object that separates and divides the space in two. 3D technology, by the effects it offers, attaches itself to literally bring this screen down, replacing the paradigmatic bar by a hyphen: 3D indeed intends to re-invent and simulate the theater-movie space. It is a space where the viewer is offered the opportunity to see the movie come to him and where it is possible for him to explore it too; a space where the viewer can, even timidly, pretend to be a character in the action, probably not the main character, but someone who is involved, by putting on glasses like taking part in an adventure, or reaching out as if to touch an object that has never seemed so close in all his life. In both cases, the screen should no longer appear as a limit or as a border to cross. Between the viewer and the movie, it must simply vanish, disappear from the theater whenever the glasses are put between the movie and the eye (the dark tint of the "lenses" completing this concealment, with a kind of veil effect).

The Screen Abolished? Dissolution and Crossing Point

Regarding Hugo, I mentioned the aim of 3D technology, which must be understood in a specific way: it is the theater that is the center of attraction of the 3D dimension of the movie. In such a context, one can pinpoint a first aesthetics of 3D technology, of which the animated film A Turtle's Tale 2: Sammy's Escape from Paradise (Ben Stassen, 2012), although it had no other ambition than to promote its special effects, is one of the most convincing examples. In this movie, the effect of objects and bodies invading the theater is at its most effective. The film, made entirely of computer-generated images and featuring anthropomorphic fish, literally and psychologically breaks the deceptive ritual of the aquarium where, hands on the glass, one can only watch the marine animals live on the other side. In this movie, the screen and the aquarium are the surface to break. The (young) viewer thus has the sensation of being immersed among the aquatic fauna swimming within his reach, in the absence of the glass that separates him from the animals he is watching. The film literally spilling into the theater, its theoretical ambition lies less in the *mise-en-scène* than in the *mise-en-salle*, staging the movie off-stage and off-screen. It is the illusion of projection that is sought after, that of a projection that would no longer be the projection of light onto the screen, but of images towards spectators, in volume and movement.

The aesthetics of projection offered here by 3D technology not only chooses the theater, but the spectator as the center of attraction. It is no longer the screen that receives the images; it is the entire theater that receives the movie. It is tempting to describe this form of cinema as *attraction* cinema – which brings us back, once again, to the origins of the medium – as the spectator is waiting to be surprised by the emergence of forms that sometimes almost seem to touch his face. This denomination is even more pertinent as the industry offers movies suitable for audiences of different ages. Some horror movies indeed use the technique of projecting objects towards the spectators, simulating the effect of surprise and danger: Final Destination 5 (Steven Quale, 2011) is a fine example of this. The attraction is no longer what is projected onto the surface of the screen, but what is projected directly into the theater. It is the spectator that attracts the objects from the movie towards him. In this inversion of the projection concept, the spectator finds himself surrounded. Although the light still comes from behind him, now it is his eyes that see objects projected towards him. The screen as a surface has therefore almost disappeared, its flatness being replaced by images in 3D that extract themselves almost physically from the screen.

There is another aesthetics of 3D that can be distinguished from the one I have just mentioned. In this second case, 3D does not favor projection effects or even the fantasized desire to see the screen dissolve somewhere between the theater

and the movie. On the contrary, the screen is first considered, not as a surface, but as a real crossing point, i.e., a window *really* opening onto the filmed world. To understand the challenges raised by such aesthetics, which has more to do with an exploration than an invasion, one should return to the concept of equipment, since it is an integral part of this aesthetics. In this case, the spectator is considered from the point of view of staging and narration, as an individual wearing glasses and therefore physically able to discover the world that will be revealed to him. The truth is altogether obvious: in order to see the movie and enjoy its 3D effects, we must be equipped with 3D glasses. However, one must note that among the films that have so far marked the recent history of the technology, AVATAR (James Cameron, 2009) firstly, as the simulacrum of the equipment of an accessory as a condition of access, visibility, and persistence of an imaginary world, is an integral part of the narrative, or at least, a privileged or even necessary condition of access. To the exploration of an imaginary world, the equipment responds like an accessory for the survival of the image in its visibility and physical experience.

Thus, in James Cameron's film, Jake Sully, a paraplegic soldier, takes possession of his avatar through a device allowing him to experience both imaginary and physically an alien world. The identification is such that James Cameron seems both too make a movie in 3D and a movie about 3D; that is to say, about the experience that this new technology intends to offer (on its release, AVATAR required theaters to be fitted with a huge range of specific technological hardware). The fact that the character is paraplegic evokes the immobility of the spectator. Like the character, the spectator must be able to equip himself to see and experience an imaginary world. James Cameron's movie does not intend to create a form of identification; it aims above all at staging the audience, and even projecting them *on screen*, through the reproduction of the simulacrum of an accessory as an inevitable condition of exploration and discovery of a 3D visual world. The aim here is not so much the disappearance of the screen but the awareness of being equipped with a special and unusual accessory, conducive to the common discovery of a world (spectators discover, along with the main character, the enchanting beauty of the world that is offered to them). If the screen remains, it disappears once again behind the glasses that stand between it and the eyes of those who watch it. The goal of such aesthetics of 3D, tending more towards exploration than projection, is to transform the spectator into a member of the equipped team. It is not insignificant to note that the film that opened the way for AVATAR, JOURNEY TO THE CENTER OF THE EARTH (Eric Brevig, 2008), was also a film of adventure and exploration.[1] 3D technology, when it does not offer to amaze or thrill by playing with sudden appearances and projections, mainly aims at helping the properly equipped spectator enter imaginary worlds.

This process, however, is not the prerogative of virtual worlds or even that of blockbusters. In this context, I would like to mention two movies, which are

among the most pertinent examples of this concept of exploration: TWIXT (Francis Ford Coppola, 2011) and CAVE OF FORGOTTEN DREAMS (Werner Herzog, 2010). In the first, which tells the story of a writer meeting in his dreams ghosts that may have been part of an investigation he is closely following, only two scenes were shot in 3D. Francis Ford Coppola wanted the viewer to wear 3D glasses for just these two sequences, as the rest of the film did not require their use.[2] What we know about these two scenes is nevertheless equivocal. They show two dreams experienced by the main character, in which he wanders, haggard, in a landscape filmed in chiaroscuro – as if the darkening of the image caused by 3D glasses required it. One can note two things: the first and most obvious is that the mandatory use of 3D glasses, as they have to be put on at a specific time, reiterates the idea of having to equip oneself to explore an imaginary space – here a supposedly mental and dream-like world. One should also note that the fact that the character closes his eyes echoes the fact that we cover our eyes with "tinted" glasses. In this gesture lies the idea of cutting oneself from the screen, the idea that the images that we will see no longer belong to its physical and measurable dimensions, those of images projected onto a surface. This is both the condition of a means of accessing an imagined world (the sequences, more than causing a rupture, try to show the echo effects between the real world and the dream world) and a way for us to free ourselves from the physical space of the theater.

The effect could indeed be reversed: if we have, at some point, to wear glasses, we are thus reminded of the fact that we are attending a cinema screening. An immersion is therefore replaced by another. Hence the idea of a crossing point, another means of access to the images of the movie. To access the dreams of the character, we must also be able, like him, to close our eyes, if only by barring the path that separates them from the movie screen. Here the screen is not abolished. Rather, it represents a state of enlightenment, an openness of the eyes, while the glasses add a state of sleep and semi-consciousness to it. The screen is therefore forgotten at the far end of the theater, during only two scenes, before we return to it, like returning to reality once we have removed our glasses. The idea is therefore that, by covering our eyes, we also cover the screen; by wearing glasses, we operate not so much through our perception of images than through the very reality of the theater. We indeed explore an imaginary world but only by putting aside the material reality of the screen, which is then less a crossing point to another world than a place of return, a return to reality. From 3D to 2D, Coppola – through his character and the investigation he follows – seems to seek what strikes us the most, which is a way to return the effects of 3D technology to both their qualities and contradictions. The accessory, meanwhile, is the object that comes between the viewer and the screen, a providential eyelid that reproduces a semi-dreamlike state.

In Cave of Forgotten Dreams, Werner Herzog filmed in 3D the exploration of the Chauvet cave, now completely closed to the public. From centuries-old paintings to the shooting in 3D, Herzog indeed offers to establish the measure between the images painted on the reliefs of the cave to the images in three dimensions in cinema, dimensions that can potentially escape the flat surface of the screen. One can see how Herzog strives, with his camera at arm's length, to move around a stalactite to film its hidden part, while concealing a drawing that is now impossible to see since, for obvious preservation reasons, free access to the cave is now forbidden. Here, 3D is restored to its inoperative state; that is to say, the fact that it is only an effect that no longer allows us to see, to see better, to discover the volumes, to browse the reliefs. Somehow, in the cohabitation of cave paintings and 3D technology, one is tempted to say that the surface withstands; not only time, but also impressions and experiences.

Between the surface of the cave and that of the screen, there obviously are fundamental differences due to their relief, undulating for the first, completely flat for the second. Is there, then, a hope, thanks to 3D technology, to see the screen crumple, thereby allowing us to better perceive the reliefs of the cave, as if the screen surface had been applied to its walls? The 3D tour of the cave is thus a way of confronting the non-relief of the screen to the countless reliefs of the filmed volumes.

To this parallel between the painted surface and 3D technology is added a quite surprising journey. While discovering the primitive paintings for the first time, we can see the film crew as Herzog had to film them while they walk along the narrow path of which they cannot deviate at risk of damaging even more an already extremely fragile cave. This cohabitation between paintings and technology gives, first and provisionally, a feeling of strangeness. Herzog indeed took special care to make it look odd, as, movie after movie, he has continuously tried to present humans as the strangest of living beings, irretrievably inspired and aspired into experiences that are beyond them (the examples are countless but almost all converge to this desire to film men trying to exceed their physical limits at the peril of their lives).

Through the spectacle of these humans encumbered with technology that awkwardly walk along a narrow path in the hope of making palpable in all their volumes the numerous reliefs offered by their environment, we are reminded of our own condition as viewers of the movie. We then realize how strange we must also seem, all watching a flat screen with identical glasses, hoping to see the volumes flattened by the movie projected towards us. The main thing is that the cameras actually seem to film us rather than the paintings, as the cameras of Herzog and his team cannot avoid crossing their gaze. Such is the measure of 3D technology: it is only a manifestation, among others, of the human desire to overcome the finiteness of his physical condition. It is only a manifestation among many others of the search for ecstasy (a theme dear to the filmmaker),

both possible and vain. Thus, watching technology and paintings coexist in the cave, we see ourselves decked out with glasses, facing a flat screen, looking for volume where there cannot naturally be any, in a bearable way.

From Withdrawal to Extinction

3D technology therefore has for its dual and contradictory condition both the engagement and exclusion of the spectator, of which the glasses are the symbol, as they, in the same manner as the screen, have the ambivalence of the window and the cover, of what opens and what confronts, they are a kind of mask, a veil thrown over the eyes, and the visibility tool of an image that would otherwise be blurred. In any case, it is no longer to the screen that falls the task of making us see the world. Now equipped with glasses, spectators go over the screen. The movie screen is, due to its flatness, what resists the idea of relief. It is the exact opposite, the wall to break down, the base that must be hidden. The aim is indeed the disappearance of the surface, and this will become even more obvious when 3D projections will no longer require the use of glasses. It is the quality of the surface that will need to be challenged, even denied perhaps, in any case cleared of the devices that until then had built a boundary between the surface and the eye.

Finally, one must explore another avenue of thought regarding digital technology in Hollywood productions. Special effects now make it possible to create worlds and sequences that free representation from terrestrial – or at least human – properties. Other screens have come in between: the famous green screen used to digitally generate special effects and those of computers that allow for the programming and production of movies from scratch, sometimes even without a camera. The 3D dimension of fictional movies, which are therefore artificial themselves, tend to replace shapes, to cover them with pixels, when they do not totally cover the body with the motion capture technology aimed at digitally reconstructing a body from an actor's movements. Screens are fading away, they disappear into digital territory, they are now the medium used by effects that virtually recreate matter. It is interesting to observe that this trend involves another disappearance, that of man on screen. Since it is no longer possible to experience a real physical and human world, what are the means of survival and recognition left to humans? Digital technology deploys its spectacular effects through expenses that pulverize everything, readily leaning towards madness.

Indeed, some movies no longer seem to be "man-made." The Adventures of Tintin: The Secret of the Unicorn (2011) by Steven Spielberg seems to be the perfect and ultimate example, the director being among those, or even the one who most methodically tries to measure the effects that digital technology has on man.[3] It is as if the movie was generating itself from within, in total

autonomy, the sequences alternating without editing. For example, one can refer to the long (it actually seems endless) action scene showing the disappearance of an entire city with the destruction of a dam. The camera spins sideways, then up and down, crossing all sorts of obstacles, seeming to follow any movement, for long minutes, without interruption, without editing. How is it humanly possible? The issue is even more striking as the characters in the film are actors, who even if very well-known have become unrecognizable as they are entirely covered with a digital skin. With such use of special effects, textures and digital production, where have humans gone? Will they disappear in this pixel storm, compressed between our cinema screen and green screens, isolated behind their computer screen? Are they disappearing from the surface?

I will end my reflection by mentioning Spielberg's latest production, Jurassic World (Colin Trevorrow, 2015). Filmed in 3D, it features dinosaurs that are partly computer generated.[4] In this film, humans risk being eaten by the creatures they have recreated; the parallel between digital creation and scientific creation is clear and it is interesting to note that the whole movie is based on a system of explosion of separation, through the system of enclosures. Furthermore, all enclosures and protection devices are vitrified bubbles behind which humans are protected, at least for a while. This could be a new benchmark in our measurement scale: all screens finally give in and spectators watch themselves disappear, swallowed by some green screen that they cannot see.

Translated by Nick Cowling and Marie-Noëlle Dumaz

GoPro: Augmented Bodies, Somatic Images

Richard Bégin

The striking thing about images produced with a GoPro video camera is the impression they give of perceiving the world with "eyes in your body." This impression is not new; film history records numerous visual moments when the image has conveyed not so much the movements of what was in front of the camera as those of the camera operator. These moments, often associated with a subjective viewpoint, are the result of the filmer's presence in the world.

The function of the GoPro device is to record this presence. Nevertheless, the peculiarity of this camera lies in its reduced size, its solidity and its autonomy, which enable it, when mounted on a drone, for example, to record a mobile physical situation dissociated from the human body. The present text sketches the history of mobilography – the recording of mobility – in which the fundamental notions of the body and corporeal perception are transformed by the advent of a technology which gives concrete form to the hybridization of the body and the camera.

The Body in the Picture

The filmmaker Alain Cavalier, in an interview with Amanda Robles, confided: "when for fun I think about cinema as a whole, I think that the greatest film I have seen in my life is that by the man who filmed the Kennedy assassination."[1] This opinion may also well have been that of the physicist Luis W. Alvarez, who in 1976 published a study in the *American Journal of Physics* of the film by Abraham Zapruder to which Cavalier refers.[2] In his article, this Nobel-prize-winning physicist recounted his research based on "blur analysis," which consists in analyzing the involuntary blurring present in some of the frames of Zapruder's film. According to Alvarez, this blurring made it possible to determine precisely the moment when the shots aimed at the president were fired. He maintained that the blurring perceptible in certain parts of the image was the result of the filmer's neuromuscular reaction, likely caused by a sudden noise, in this case the report of a gun. According to this analysis, the film frame retained not only a visual trace of a corporeal perception of the environment in which the filmer

found himself; it also made it possible to credit the theory of three shots. Apart from the conclusions that have been repeatedly debated since, what blur analysis also made possible was a shift in the image's reference, from the crumpling of the president's body to the trembling of a body caught in the act of perception. The image thus reveals not only the visible forms of an event, but also the nervous reaction it brings about in the body of the witness to it.

One might suppose that this same referential shift is what made Alain Cavalier say that this may be the "greatest film" in cinema. Here, we should keep in mind that some of Cavalier's films evoke, more than anything else, his desire to connect the body of the filmer with that of his or her hand-held recording device. In Le filmeur, more precisely, Cavalier himself stubbornly remains as one with the camera: he carries and transports it without calculation or circumspection in order to catch hold of his immediate surroundings. He thus films his world even before adopting a viewpoint of it or casting judgment on it. The result is a raw, rough, and sometimes insignificant image, the result primarily of the feverishness of the filming body. In this way, Cavalier privileges the production of *somatic* images: images by means of which, as he describes, "the viewer can sense the breathing of the person filming, the slight trembling of his body."[3] We might thus argue that the reason Zapruder's film is so important in Cavalier's eyes may be because it succeeds in producing a somatic image of Kennedy's assassination, an image whose reference turns out to be, firstly, that of the trembling body of the filmer sensitive to his environment. In this way, both Alvarez and Cavalier appear to recognize the central role played by the filmer's sensitivity and corporeal perception in the production of a moving image. But while Alvarez studies this image scientifically and from a legal perspective, Cavalier interprets it poetically and elevates it to an exemplary figure in film history.

If this reading of his disclosure is correct, Cavalier was echoing an illustrious predecessor who, early in the history of cinema, anticipated the fundamental role corporeal perception would play in the production of moving images. Alexandre Promio, a Lumière camera operator, was seemingly the first to express the desire to create a "mobile cinema" capable of reproducing the perception of a moving body, whether organic or mechanical in nature:

> I first had the idea of panoramic images whilst in Italy. When I arrived in Venice and was going from the station to my hotel in a boat on the Grand Canal, I watched the banks of the canal recede as the skiff advanced, thinking that if immobile cinema makes it possible to reproduce mobile objects, we might be able to turn the proposition around and try to reproduce immobile objects with a mobile camera.[4]

We might interpret these remarks by the person said to be the inventor of the tracking shot and the pan as one way of suggesting that a mobility impulse

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haunts cinema and that, as a result, the Lumière Cinématographe's immobility, inherited from the photographic gesture, did not do justice to the possibilities of the new device. The extension of corporeal perception suggested by the manual properties of the device – its ease of handling, its (trans)portability – might thus be understood as the true promise of a medium whose distinctive feature, need I point out, is its ability to record movement. And this movement, as Promio remarks, is not only that which can be seen in front of us, but also that of the person who takes on the very perception of what is seen. Following this interpretation, we might ask if this extension of corporeal perception made possible by portable devices is not at the same time, and perhaps even more so today, the concrete manifestation of a secret design that to this day still bears the highly inclusive name "cinema."

It is also by following this interpretation leading to an oblique history of cinema that Alain Cavalier's admission makes sense. It enables us at the very least to undertake an archaeology of the film medium, no longer from the perspective of ideas such as narrative, genre, author, or representation, but rather, in particular, from a technological intentionality of audiovisual recording devices, which are also and above all designed to move *with* a subject and an environment, which are also moving. If this intentionality turns out, as I am suggesting, to be the basis of the innermost identity of "cinema," we can no longer trifle with Cavalier's admission, or with Jonas Mekas's prediction that cinema's salvation lies, no less, in 8mm films.[5] In this light, "great" films would thus be those which, made with ever smaller and more affordable devices, give image to the experience of a world that is both gripping and grasped by the body of the filmer. And whether or not this body is that of a "filmmaker" properly speaking matters little in the end, as long as what is recorded in images is the trace of an environment as it is seen, at the precise moment it provokes, agitates and stimulates.

I have given this kind of recording the name mobilography – or the recording of mobility – to describe a media practice which, when assimilated to its lesser forms in avant-garde or amateur cinema, may demonstrate a drive on the part of the medium much more fundamental than we may think. Whether we are speaking of Promio's "mobile cinema" or of Cavalier's "greatest film," both situate their remarks as a celebration of generalized mobility: the motility of the filming body, the portability of the technological object, and the ability to enter into the environment. While Promio celebrated the transportability of the recording device, Cavalier celebrates the motility of the filmer. One does not exist without the other, if indeed we are ready to acknowledge that a filmer can be organic or mechanical in nature. For even in the case of the trains used in the "Phantom Ride" phenomenon, or of automobiles, surfboards, and drones, there is always a "filmer" – mechanical, yes, but endowed with an equally motile body, whether made of steel, plastic, or integrated circuits. In each case, the device is (trans)ported and records the corporeal perception of an environment that is

simultaneously stimulating and animated. This, in addition to generalized mobility, is the perception celebrated by Promio and Cavalier. In addition, what they are exalting in doing so is the history of a gesture: the simple gesture of taking a video camera and documenting the presence of the filming body in the world. Let us, then, understand this celebration as a maxim: perhaps cinema will not be fully achieved and films will not be "great" until, precisely, the moment when they are produced, on a small scale, in a state of urgency, instantaneousness, mobility, and impulsivity.

From Yesterday to GoPro

When Jonas Mekas remarks that "my camera allowed me to participate in the life that took place around me,"[6] and that there is "no crew, no camera operator, no sound person. Just me, my camera and the life around me";[7] and when Johan van der Keuken remarks that "the work of a film shoot consists, precisely, in being as open as possible in order to be able to react in a specific manner to each circumstance," and that "your different ways of being are conveyed immediately in your physical reaction with the camera,"[8] are they not both emphasizing the physical experience involved in the use of a moving picture camera? At least it appears that this experience, in their view, is what should be conveyed in images, in addition to – or, in spite of – what is depicted. These remarks by well-known filmmakers match point for point the sales pitch of the GoPro video camera. To be precise, this pitch rests less on the qualities of the device than on the physical experience provided by – or coming with – its use.[9] This experience is thus nothing without the body carrying the device. It is impossible, then, to separate corporeal perception from the images it produces, a perception around which both the machine producing the images and the environment of its production are organized. From Promio's pans to images produced with GoPro there is thus sketched out a paradigm of media mobility, within which the cinema is redefining itself along the lines of an instrumental corporeality, traced in images. In this way, cinema's identity draws on a primordial, fundamental experience of the world which, against the backdrop of corporeal perception, invites documentation. But not the way a traditional documentary would document it, for, as Van der Keuken remarks, "what one documents in the end is a physical presence, not only that of the other but also one's own. It may be much more important to document the fact that you were there, and how."[10]

The physical presence Van der Keuken refers to concerns in the first place the conditions of an augmented body, equipped with a device. What the images of Zapruder, Cavalier, Promio, and Mekas all have in common is that they express the motility of a body in a media situation. In other words, the somatic images under discussion here refer to the state of a body-camera revealing its excitation, agitation, or state of rest. Rather than depicting a subjective vision of the world

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obsessed with discoursing on this vision, these images preserve the trace of a pre-discursive recording, that of the physical experience of what is occurring. What one may thus be hoping to record is the sensitive film of the world, the innervation at the origin of every experience. In this sense, the arrival of the GoPro camera on the market simply met a fundamentally cinematic need, consisting not in recording the individual's point of view – something every sort of photographic camera already did, in any event – but rather, to paraphrase Van der Keuken, in documenting the simple fact of being there, and how. This "fact," however, is simple only in appearance, because every physical presence is already attached to an environment whose sensitivity it reveals. We see this in the film by Zapruder, who does not offer a point of view on the event but reveals instead the sensitive film of a world perceived at that very moment and in that very place. The somatic image of an event concerns above all else the environment it transforms and the body-camera which both experiences and records this same – at the very least stimulating – transformation.

It was thus not by chance that the GoPro camera first appeared in the world of extreme sports. We might note in passing that the founder of the company that manufactures these small, solid, high-performance cameras, Nick Woodman, was a surfer who wanted primarily to record his own exploits. But more than just his exploits: what he also wanted to preserve was a trace of the adrenaline rush characteristic of this sport. In short, the GoPro camera had to promise its users they would experience and record the moment without having to bother with choices around point of view such as focusing, framing, and shot scale. In this sense, we must acknowledge that its promise has been kept. As Vincent Laforest remarks, "The GoPro, more so than any tool that ever preceded it, has allowed people to focus on experiencing the moment, as opposed to focusing on capturing it."[11] Alexandre Promio's "mobile cinema" has thus come a little closer to fruition thanks to a device that makes possible nothing less than recording mobility on the fly. But more than that, this device literally worn by an individual gives its likeness to a sensitive environment, sometimes telling us more about the world than any words chosen to describe it. Was it not Woodman's ambition to transmit and share the audiovisual traces of an extreme experience whose excitement, agitation, and nervous effects cannot easily be conveyed in words? What is true for the world of extreme sports is certainly also true for eyewitness reports, sexual practices, citizen reportage, and fishing on the high seas.

The case of the film LEVIATHAN (2012), produced under the aegis of the Sensory Ethnography Lab at Harvard University, is an exemplary case in point. The film is not, properly speaking, a documentary about fishing, but rather one that tries to convey to the viewer the sensation of this sometimes noble but more often exhausting and laborious activity. What the filmmakers Veréna Paravel and Lucien Castaing-Taylor thus sought to communicate was a physical experience

that the words and images of a traditional documentary would normally fail to convey:

> We rid ourselves of all the conventions that pollute the documentary genre, interviews, etc. And during our first days at sea, we threw out every image that seemed familiar to us. Nobody needs a new film on fishers. As long as we were on the bridge, we had to cling to our subject, stick with what was happening before our eyes and find a way to convey the very, very physical – and metaphysical – aspect of this work.[12]

And the best way to cling to your subject, understood here in the most general sense, is quite obviously to become one with it. The GoPro camera enabled the filmmakers to record the "very, very physical aspect" of this work by attaching several of the devices to the hull of the ship and to the fishing members. As the body-camera enables us to perceive the environment as it happens while fishing on the high seas, it becomes the body-camera of the ship as much as that of the fishers. The result is fascinating, and the sometimes nauseating image is disconcerting. Not because it represents hard labor, as we would expect a documentary to do, but because this labor is literally embodied in the film:

> Instead of following traditional documentaries' humanist fixation on labor and the problems arising from it, the documentary aims to show the bodily work involved in this practice via its audiovisual intensity, as an embodied experience and inextricable part of humanity's being-in-the-world.[13]

The device thus makes it possible to produce a somatic image of fishing on the high seas. But more than that, it succeeds in recording the general mobility of an activity that, caught on the fly, cannot easily be communicated through language. The act of fishing cannot be reduced to the fishers' stories or explained more adequately by documentary discourses attempting to express it or by fictions trying to depict it. It is also, and especially, characterized by physical gestures, muscular effort, shortness of breath, the ship's movements and by being buffeted by wind and water; in short, by the motility of the body and the vicissitudes of nature. And the portability of the device molds itself to these vicissitudes and to this motility, becoming one, not with the fisher alone, but with a "subject" which, as a whole, occurs and develops above all in a pre-discursive sensibility.

From GoPro to Tomorrow

The GoPro camera is a recording device that emancipates the sensitivity of human and non-human bodies from the intelligible discourse normally expressed on their subject by an interpreter's gaze. This emancipation enables

us to include this device in a recording practice – mobilography – which includes, to varying degrees of emancipation, other portable devices such as the Ciné-Kodak, the Bolex, the 8mm camera, video, the mobile phone, and the Pathé Baby. All these devices are part of a cycle of generalized media mobility and, especially, its recording. And it is the somatic image generated by this recording that will allow us one day to construct the iconography of such a cycle. But what the GoPro camera offers in particular, and what makes it not only a fascinating case study for examining mobilography but beyond that a turning point in the history of this practice, is that from the technical point of view alone, the device – or its earliest models, at any rate – has no viewfinder. The viewfinder is independent of the device; it can even be used from a different device, such as a tablet or telephone. In this way, the recording device as such no longer has the sole task of extending our vision but of extending the body, to the point of mitigating its own limits. We should not forget that its inventor's intention was to make a device whose primary purpose would be to record the corporeal perception of an environment, whether or not this environment was accessible to the organic body of human beings.

Seeing with GoPro is thus almost to use it in a way not intended. The main point is more to create an experience than it is to make seen. In this sense, the choice of manufacturing the device without a viewfinder is understandable, and it is interesting to note, as Nick Paumgarten remarks in an article in *The New Yorker*, that it redefines the interest of the filmer's gesture itself:

> The GoPro is defined as much by its limitations as by its advantages. It has no display, so you can't see what's in the frame. In a way, this doesn't matter, because the wide-angle lens takes in so broad a field (everything in focus, everything lit) that you need only point it in a general direction and you can expect to capture something good.[14]

That it is enough to point the device to obtain a good image reveals two things: on the one hand, that everything is worthy of being recorded, and on the other, that pointing appears to be more important than seeing. In other words, our perception of the world is primarily the result of a body equipped with a device, directed intentionally or not, and no longer solely the result of a well-defined human intentionality. The image's reference has been irredeemably affected by this and concerns less the meaning associated with a point of view than vitality, energy, the mechanism, or the nervous reaction at the source of this point of view. Here, we encounter once again the referential shift I spoke of above, while at the same time adding a slippage in the interest of an image in which the world acquires its meaning not through reference to what is visible and possibly intelligible, but according to the presence and the condition of *what* or *who* is recording.

Later in the same article, Nick Paumgarten gives this highly useful analysis of the production of images with GoPro:

> The short video synonymous with GoPro is a kind of post-literate diary, a stop on the way to a future in which everything will be filmed from every point of view. Humans have always recorded their experiences, in an array of media and for a variety of reasons. Not until very recently, with the advent of digital photography and video, and unlimited storage and distribution capacity, has it been conceivable to film everything. As we now more than ever communicate through pictures, either still or moving, perhaps our lives come closer to Susan Sontag's imagined "anthology of images." An obvious example is the people who film concerts on their smartphones. Will they ever watch the video? And if they do will it measure up to the concert, which they half missed? Of course not. They film the concert to certify their attendance and convey their good fortune. The frame corroborates.[15]

It would not be inaccurate to see the images produced by GoPro simply as the attestation of a presence or of the nervous effects typical of a given activity, whether banal or not. But it would be inaccurate to deduce from this that such seemingly narcissistic audiovisual documentation cannot historicize an event. Paumgarten tells the following anecdote, which demonstrates the extent to which the somatic image preserves the trace of a fundamental experience of the world and, at the same time, enables the viewer to experience, by proxy of course, the sensitive layer of events:

> Two years ago, my son, then ten, won a GoPro in a school raffle. On a ski vacation that spring, he affixed it to the top of his helmet with the standard mount – Tinkywinky, we called him, after the Teletubby with the triangle on its head – and let it roll most of the day, five to fifteen minutes at a stretch. What struck me, while watching some of the footage on a laptop later, was the idiosyncratic ordinariness of it. As he skied, he whistled to himself, made odd sounds, looked around at the mountains, shouted to his brother and his cousin, cried out at the slightest hint of air, and now and then bent forward and filmed upside down through his legs. Even though the camera was turned outward, filled mainly by the sight of the terrain sliding past, it provided, more than anything, a glimpse into the mind of a dreamy and quiet boy – who, to my eyes, during the day, had been just a nose, his features and expressions otherwise hidden by helmet, neck gaiter, and goggles. I didn't need a camera to show me what he looked like to the world, but was delighted to find one that could show me what the world looked like to him. It captured him better than any camera pointed at him could. This was a proxy, of sorts.[16]

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Here the image becomes an interface between the visible world and the sensitivity of the environment which defines this world. The emotional guarantees provided by the recording of this sensitivity are the wave on which those who run GoPro are riding, knowing that the device does not just produce an image, but gives rise to a sensation. "They don't just sell a video camera, they sell the memory of the wave or the ski trip down the slope,"[17] remarks Ben Arnold, a consumer technologies industry analyst. This promise of a recorded, archived and shared sensitivity is the appeal not only of the device, but of the body of the people – or the things – wearing it:

> That's the reason, Arnold says, that brands like Beats and FitBit have done so well. They say something about the people who wear them. The iPhone might have been a status symbol when it was first introduced. Now, it's a utility that says as much about its owner as the fact that she is wearing shoes. But when you see someone with one of those GoPro Hero 3 cameras strapped to her chest, it's a signal to the world that she is about to do something awesome.[18]

In other words, the emancipation of the body brought about by the device is such that the event is no longer recorded by the device, but engendered by it. Here the turning point represented by the GoPro camera provides us with a glimpse of the future of mobilography. I said earlier that mobilography is the recording of generalized mobility, including the motility of the filming body, the portability of the technological object, and the ability to enter into the environment. Now, if we acknowledge that the body in question can be organic or not, mobilography can thus free itself of human intentionality and be concerned only with the recording of pure mobility. The GoPro camera, when it is mounted on a car, a surfboard or a drone, acquires a degree of autonomy which, although still limited, leads in the direction of what could be a true "mobile cinema," meaning a cinema based on the recording of movement, and bodies equipped with devices which perceive this movement and become in a sense its reader head.

Introducing the GoPro camera into a history of mobilography thus enables us not only to highlight the similarities between it and other portable devices before it, but also to revisit the history of cinema through the lens of corporeal perception. In this sense, the miniaturization of recording devices should no longer be understood solely from the economic perspective of affordability or from the social perspective which sees in this process the possibility of a new form of citizen involvement based on the individual. Perhaps we even need to see the miniaturization process as the expression of a technological intentionality proper to the cinematic apparatus, which since its advent has promised more the recording of mobility in general than the mere depiction of the thing moving.

Translated by Timothy Barnard

The Four Practices?
Challenges for an Archaeology of the Screen

Erkki Huhtamo

Over a decade ago I began calling for a new branch of media studies – "screen-ology" or "archaeology of the screen" – claiming that its "focus should not be only on screens as designed artifacts but also on their uses, their intermedial relations with other cultural forms and on the discourses that have enveloped them in different times and places."[1] I was motivated by a contradiction I encountered repeatedly in both popular and critical discourses: the overwhelming presence of screens in contemporary life was not accompanied by any systematic knowledge about their identities, including the media practices they are part of and the processes of their becoming. I found Charles Musser's writings on "screen practice" inspiring but limited in scope, because they remained firmly embedded within the paradigm of cinema studies.[2] Musser managed to demonstrate that early silent cinema continued the traditions of magic lantern show-manship, but left other possibilities unexplored. The ultimate challenge, I thought, was to understand the interplay of any visual cultural forms whether they were exhibited on "screens" or not, and to situate them within proper settings.

What Musser called screen practice had been flanked for centuries by a "peep practice."[3] Some images were projected while others were peeped at through lenses. Peepholes were installed in walls, as in the Cosmorama, and embedded in a plethora of viewing machines. Peep media do not always present moving images – just think about the stereoscope – but the different forms are connected by practices of use and need to be assessed together. Likewise, a full account of screen practice should include not only magic lantern and film projections but also other forms such as shadow theater, where scenes are created by performers by means of puppet figures or simply by fingers, as in *ombromanie* or shadowgra-phy.[4] The moving panorama, which used neither projected images nor a screen in the proper sense of the word (the moving painting itself doubled as the screen), should also be included because the context of presentation (auditor-ium, audience, proscenium arch, etc.) associated it with projection-based forms

like the magic lantern show.[5] Even *Bänkelsang*, the age-old ambulant practice of presenting broadside ballads with accompanying pictures, deserves a place within screen practice, in spite of its crude and "non-technological" nature.[6]

Arguably, it is possible to identify even more media practices. I have labeled two as "touch practice" and "mobile practice," but there may be others.[7] By the former I mean situations where "a tactile relationship to the media machine [...] transforms the viewer into an 'interactor.'"[8] This differs from screen and peep practices, where a physical separation between the observer and the observed is established. Projecting images on a screen or placing them behind a peephole makes them physically unreachable and therefore beyond the observer's manipulation. Touch practice can be exemplified by the camera obscura. A typical portable box camera obscura projects a scene on a ground glass "screen" that is part of the instrument.[9] The user sketches it on a sheet of transparent paper placed on the glass; a tactile relationship is formed. Room camera obscuras were popular at 19th-century tourist resorts. The visitors observed moving scenery projected from the outside onto a horizontal table-like surface. They were able to touch the projected scenes with their fingers, which seems to have been a common practice, and to "follow" the tiny figures of humans and animals by manually rotating (by means of a rod or a crank) the lens and mirror assembly installed on the roof.[10]

The everyday acts of fingering smartphones and tablet computers may seem unrelated with the experiences of the camera obscura, but from a media archaeological perspective they hark back to earlier forms of touch practice. It is worth evoking 19th-century philosophical toys like the phenakistiscope and the zoetrope. These proto-interactive devices provided optical illusions for users manually spinning handle-mounted picture discs or swiping rotating cylinders. The enormously successful Kaleidoscope, which was introduced in the 1810s, is a tactile device as well.[11] It can be suggested that touch practice is derived from outside media culture. Tactile media machines require similar gestures as hand-operated tools, scientific and musical instruments, industrial machines, and toys. Assessed from an extended perspective, tactile media may be claimed to have received a powerful impetus from Enlightenment ideology, which emphasized human-machine relationships. It cannot be a coincidence that the Thaumatrope, a simple optical toy, was playfully compared with a machine by contemporaries or that the designs for 19th-century phenakistiscope discs depicted imaginary factory machines "operated" by the observer's fingers.

"Mobile practice" is the least understood and the most complex. It deserves attention especially in light of recent developments. I use the term about any situation where the media user is physically in motion, whether on foot or in a vehicle (just inhabiting the planet Earth does not count). There are two variants: in the first, the observer moves through a relatively immobile environment while observing it; in the second, the thing being observed and/or used moves together with the observer. The former can be exemplified by the circular Panorama,

where the visitors must keep moving around the viewing platform to be able to examine the 360-degree painting in its entirety. The Diorama, a competitor, placed the spectators (who were either standing or sitting) in a mechanically rotated auditorium.[12] The Cosmorama presented yet another solution.[13] It was a picture gallery with rows of peepholes lining its walls. The visitors peeked into them one after another, which made brief repeated physical displacements necessary. Instead of presenting a continuous immersive environment like the Panorama, the Cosmorama offered a discontinuous series of disguised scenes.

Panoramas, Dioramas, and Cosmoramas were often installed in cities, but as indoor spectacles they were segregated from the urban outdoor environment. Even so, they had similarities with the mobilities inherent in everyday practices like strolling on streets or in parks, visiting museums and stores, and experiencing mechanical rides. As Walter Benjamin famously pointed out in his *Passagenwerk*, the covered passage became a symptomatic liminal zone between the interior and exterior aspects of the city.[14] With its shop windows and cafés, it was a visual spectacle that kept the visitors strolling from one attraction to another much like the Cosmorama. Interestingly, entrances to some Panoramas, Dioramas, and Cosmoramas were located inside such passages, which created a fluid "passage" from the street into the simulated realms of the attractions. Yet, one could also evoke a seemingly quite different model: the picturesque gardens that became fashionable in the 18th century. Such gardens, which were influenced by oriental models, were designed as sequences of visual attractions – kinds of "pictures" – distributed along their pathways. By carefully orchestrated stops and motions, their creators used natural elements much like media creators would use technology to direct the visitors' eyes and bodily kinetics.

In the course of the 19th century urban environments themselves became increasingly configured as visual attractions that competed for the attentions of the passers-by. The spectacularization of the city space manifested itself not only in buildings reaching toward the skies and in department store show windows, but also in the proliferation of posters, billboards, and "sky-signs" (commercial see-through signs posted on rooftops).[15] Neon signs and eventually huge video displays joined a trend that purported to turn the streets and squares into alluring distractions. They appealed to both pedestrian and vehicle traffic, creating new sights for perceptions that required multitasking skills. Physical surroundings were turned into "scripted spaces."[16] City views and traffic circulation systems were carefully designed to anticipate and control crowd movements and to pre-empt deviant behaviors. This tendency was painstakingly implemented at the structures of mass events like the Paris Universal Exposition of 1900, which was held in the city center, making it necessary to create a huge regulatory network for movements within an already existing one.[17]

The second variant of mobile practice presents theoretically three alternatives. The device, which is used while the user is in motion, can be either wearable

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(strapped to the body), portable (carried by the user), or vehicle mounted.[18] In everyday life these options cannot be fully separated from each other, like motion cannot be absolutely separated from moments of stasis. The first alternative manifests itself in the habit of strapping a music player or mobile phone on the waist or arm and using it with a headset, earphones, or "hands-free" headphone-microphone combination. The device is adjusted only occasionally, normally when the user makes a brief stop. If the device has a screen, it is only viewed during such intervals. The second alternative, portability, gives the user – depending on the case – either more or less flexibility. The device is typically kept in a bag or a pocket and only pulled out when needed. It accompanies the user, but not as symbiotically as a wearable one. Since their introduction, this has been the case with snapshot cameras, which are rarely used *while* walking; the user pulls the device out and stops to take a photo. However, the explosive growth of smartphone use has given rise to the habit of staring at its screen, interacting with it, and even sending text messages while in *actual* motion. This seems to contrast with earlier habits. Its analysis requires the creation of new theoretical models.

The third alternative, vehicle mounted use, is not absolutely segregated from the other alternatives. Portable and wearable equipment can be plugged into the car's media system and disconnected again, emphasizing the lack of definite borderlines between different forms of mobile practice. Still, modern vehicles from automobiles to jetliners have complicated built-in media systems at both their "pilots" and their passengers' disposal. An archaeology of embedding media machines into mobile "prostheses" – particularly from the perspective of the discursive formations that influenced their inception and reception – remains largely undone. Nadar's famous experiments with photographic cameras in hot-air balloons should be included, although the balloon mostly served as a super-elevated viewing platform. The claim that Lars Magnus Ericsson, the Swedish pioneer of telecommunications, may have installed a telephone in his car around 1910 is also relevant, even though the story may be apocryphic and the device could not have been used while the vehicle was in motion.[19]

Such stunts were not unheard of at the time. Early on, radio amateurs, engineers, and other enthusiasts began assembling wireless radio equipment in their cars and even bicycles. Lee De Forest displayed a "Wireless Auto No 1" at the St. Louis Exhibition 1904, and a little later installed portable equipment on horseback.[20] A 1922 article in *Popular Radio* reviewed several cases of radio equipment in automobiles.[21] Although the author deemed the endeavor "practical but inconvenient," he assured the reader that "[t]here is no doubt that radio on moving vehicles will be further developed to the point where it will not only be a novelty, but a convenience to the public," listing applications that had already been demonstrated.[22] In the coming decades, the car radio became a ubiquitous feature of the dashboard and features like cassette players were added in due course.

These days, many car models include rear view video cameras, embedded entertainment video systems, and GPS navigation facilities. By installing extra equipment, the vehicle can be turned into a "boom car" for getting attention or annoying others.

It is time to narrow down the focus and concentrate on a little researched issue: wrist-mounted screens. This issue has been made topical by the emergence of the smartwatch, specifically the hyped Apple Watch, which was released on April 24, 2015. The smartwatch raises difficult challenges for media studies in general and for screenology in particular. What kind of a device is it? Does is belong to "media culture" or is it a cultural hybrid that partakes of numerous identities, resisting classification? The smartphone has what can be called a screen, but how should one describe the practices it engenders, and supposedly engages in – assuming it can be claimed to have emerged from an existing context of uses and discursive formulations? An archaeology of the conditions and anticipations that prepared the ground for smartwatch-like devices is needed, although only preliminary peeks can be provided here. Whether the smartwatch will manage to break into the mainstream of media is an interesting future-oriented question, but does not greatly concern screenology.

As some observers have pointed out, the word smartwatch feels like a misnomer. The smartwatch is a multifunctional communication terminal, much like the smartphone from which it derives and for which it serves as a substitute or extension. One can tell the time by glancing at its customizable digital clock face, but that is only one application among many. For most uses, an active smartphone connection, a hook-up between a wearable and a portable device, is required. This has led to questions about the utility of the smartwatch. If one already has a smartphone in one's pocket, how much difference does it make to be able to check the same information or to perform the same tasks (sometimes with less ease) by flicking one's wrist? There are those who explain the motivations behind the development and marketing of the smartwatch by external reasons related with the high technology market rather than by any real practical needs. Even monitoring the user's bodily functions like the heartbeat is already served by more economical dedicated devices.

The current market for portable communication devices is characterized by the already familiar. Since the introduction of the smartphone and the tablet computer there has been qualitatively little new on offer. For several years the product launches by major companies like Apple have concentrated on extolling improved details instead of offering radically new concepts. An exception was Google Glass, a wearable communication device worn in the manner of eyeglasses while a tiny virtual screen hovers in the user's field of vision. Although it did have predecessors that deserve yet another media archaeology, Google Glass, which was publicly announced in April 2012, was novel enough to ignite a widespread debate, even among those who never got an opportunity to try it on.

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The device was considered nerdy and arrogant, an intrusion on privacy, and insufficiently developed before its rushed public launch. In part because of the large amount of negative publicity, Google discontinued selling the Glass in early 2015.[23] It became a warning example for those who intend to mass market untried concepts as well as a soothing reminder that corporate power, hubris, and gloss are not always enough to mesmerize the public.

It is not surprising that those who speculate on the prospects of the smartwatch have referred to Google Glass as a point of comparison. A Google Glass that would have matched the inflated expectations created by Google's concept videos, showing the user's entire field of vision, the visible world itself, turned into a "screen," might well have been desirable for those who have internalized the "always-on" lifestyle. Quite another issue is the institutional and communal attitudes toward unauthorized video recordings made by an almost undetectable head-mounted camera and instantly uploaded on the Internet for anyone to view. Similar concerns have been raised and eventually allayed in earlier circumstances, for example when amateur snapshot photography was introduced in the late 19th century.[24] Still, the current ramifications of the "wild," unregulated uses of networked communications are much more complex and extensive. They involve not only personal privacy but also surveillance and terrorism, which makes it unlikely that devices like Google Glass would be allowed in public spaces without restrictions any time soon.

The issue of visible vs. invisible design is central to the marketing efforts and public image of both Google Glass and Apple Watch, although it has manifested itself in different ways. While undercover camera operations were part of the lure of Google Glass from the beginning, it was also marketed as a device that would be noticed, turning it into an attribute of its wearer. This corporate strategy became manifest when Google founder Serge Brin introduced Google Glass by wearing it at a Silicon Valley charity ball; bloggers immediately spread the word on the internet and Google followed up by posting promotional concept videos on YouTube. Later the New York-based fashion mogul Diane von Furstenberg began promoting it by having her models wear it on the catwalk.[25] Google Glass was to be a token of the "new cool" of the millennial generation. Ironically, being associated with the arrogant Silicon Valley neo-yuppie elite, partly prompted its demise. The fact that Apple Watch was promoted as a fashion accessory may have reflected the company's concern that it might not be perceived as utilitarian enough to warrant a purchase.

Compared with Google Glass, the smartwatch is less intrusive, as it can be hidden by the sleeve if the user chooses. Most of the models introduced so far do not contain a camera, although it has been rumored that cameras and other spying accessories are on their way. This leads back to the initial question: why talk about a smart*watch*? This has to do with a common strategy used by advertisers, the association of the familiar with the unfamiliar. For years there has

been discussion about the declining use of wristwatches among members of the younger generations who rely on the smartphone both for their communication and time-keeping needs. The smartwatch is an effort to revive a waning but still familiar habit by associating it with features of the smartphone and branding the combination as something unprecedented. There is a persisting cultural memory that associates the wrist with a device. The industry assumes it can be refreshed, turning the obsolete into "hip" and "cool." Ironically, after Apple Watch was launched, it was soon reported that users with dark tattoos on their wrists were experiencing problems with the censors placed on the underside of the device.

The smartwatch is a smart*watch*, because it has inherited a location on the body where an earlier device, a wristwatch, used to be worn. Because it most likely borrows from a coded body language, it is important to extend the discussion into an archaeology of the encounters between technology and the wrist. What has happened on that particular body site, when, how, and for what purposes? There may be those who have never thought about the historicity of the wristwatch, even though its history is much shorter than that of time-keeping devices in general, and related with technological, social, and cultural changes. An archaeology of the smartwatch should begin with an archaeology of the wristwatch – an endeavor that may seem to have nothing to do with media culture and media studies. But why respect artificial barriers between and within cultural categories and academic disciplines? For screenology, as I envision it, such barriers are hindrances that must be breached. Overlaps and leakages between cultural practices should be embraced rather than eschewed.

Can the wristwatch be considered a media machine? The immediate answer is no. Although it has a "screen" (the clock face) and a user interface, including a winding knob, it is a single purpose device for telling time. In its basic form it has – unlike media machines – no separation between hardware and software. Even so, the wristwatch is necessarily surrounded by a "dispositive," a schematic model of the user's potential material and metapsychological relationship with the device.[26] In this case it does not deserve to be called a *media* dispositive, but extending the uses of the familiar film-theoretical concept (formerly known as the "cinematic apparatus") makes sense. The dispositive enveloping a wrist-mounted device has a more symbiotic relationship with the wearer's body than a portable device. The dispositive that has gradually developed around the wristwatch has been embedded within varying social contexts that have molded its meanings. After having been a rare oddity, the device became more widely used by European women in the late 19th century at outdoor activities like hunting, horseback riding and bicycling, but was still considered a jewelry-like fashion item.[27] The first specimens were embedded in bracelets. Males preferred pocket watches that remained hidden; only their chains indexically pointed to their presence.

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The wristwatch gained popularity among men only after the turn of the 20th century. Spurred by a gender reversal in its identity, it was redefined as a functional object with potentially life-saving qualities. This shift has been symptomatically traced back to the wristwatch designed by Louis Cartier, the French jeweler and clockmaker, in 1904 for the famous Brazilian aviator Alberto Santos-Dumont. Apparently, Santos-Dumont found it difficult and dangerous to check his pocket watch while steering his dirigible in flying competitions.[28] The technology-related profile of Santos-Dumont may have convinced others about the masculine appeal of the device. More compelling proof was gathered on the battlefields of World War I, where wristwatches were used by the infantry, air force, and navy alike.[29] Yet more evidence originated at Taylorized factories and offices where employees had little time for breaks and few chances of even removing their hands from the machines they were operating. While the leisurely gesture of slowly reaching for one's pocket watch had matched the pace of Victorian life, it became obsolete in a modern society that valued efficiency over anything else.

As this brief and tentative foray into the history of wrist-mounted devices hopefully demonstrates, a media archaeological analysis should ideally examine both gadgets and practices, persuading them to illuminate each other. The idea of the dispositive can help in reaching such a goal. However, instead of being treated as an a-historical abstraction, it should be tested within contextual settings that are historical in nature and affected by ideological, social, economic, and other factors. Applying a notion from cinema studies to a very different situation may seem inappropriate. After all, the cinema is an architectural "viewing machine" with more or less permanent features that condition the experience. Wristwatches and smartwatches go wherever their users go – the dispositive may seem to be everywhere and nowhere. Still, their identities must never be conceived as limited to the materiality of the device only. They are both fixed and fluid, molded by the manufacturers' intentions and by the social (inter) actions of commentators and users. The dispositive functions in the manner of a *topos*, as a formulaic idea traversing media culture where it is reinstated and re-interpreted over and over again.[30]

In conclusion, it should be emphasized that the four practices I have identified are models imposed on the past, rather than something identified by the historical agents themselves. However, they are not arbitrary constructs. They give shape to traditions that have authentic historical currency, lost in the thick of things, waiting to be unearthed. Talking about screen, peep, touch, and mobile practices does not mean positing entities with "hard edges." On the contrary, these concepts should be understood as permeable. The traditions they delineate have kept crossing and merging with each other for centuries. That is how media culture develops. Media forms and their uses are constantly negotiated, tested, and contested. Material applications meet discursive ideas; the vectors of influ-

ence can point to either direction, depending on the case. The processes are "messy" because of the multiplicity and indeterminacy of the conglomerations of contributing factors. It is the screenologist's task to provide order, but without pretending that this order is the sole or even the determining characteristic of the essentially chaotic processes under investigation. The dialectics between observer and observed, between cosmos and chaos, should be acknowledged.

Screens in the City[1]

Nanna Verhoeff

In this essay I consider urban screens as *mobile media architecture*. Digital screens installed in the city, often in conjunction with location-based and mobile media technologies, provide interfaces that intervene temporarily, yet fundamentally, in the built environment. I take as my theoretical objects two urban screens that, while demonstrating the architectural principles of screen-based *dispositifs*, simultaneously challenge conventional ideas of architecture as fixed, stable, and permanent. They are a "selfie pillar" as an example of screen-based contemporary urban advertising and narrowcasting, and the public art project *The Bridge*, designed for a large, traveling urban screen.[2] These very different examples of urban screens both construct temporary and mobile architectures for spatial extension and connectivity. In so doing, they demonstrate a combination of architectural and cartographic logic. This twin logic is inherent in the intersection of spatial design (architecture) and mobile and location-based technologies that offer tools for spatial orientation (cartography). As mobile architecture these urban screens demonstrate how our current visual regime of navigation functions.

Mobility in the Urban *Dispositif*

The *dispositif* of urban screens is spatially layered: at once comprising site-specificity of the screen – the inner-circle, if you will – as well as the surrounding public spaces – the outer circle. This broaches the question of how screens in the city situate us both as spectators in relation to the screen, and as navigators within and inhabitants of this larger, connected space. Moreover, it raises the question of how the presence of screens reconfigures the space itself. This entails a special attention to infrastructure – the spatial, urban *dispositif*; interface – the screen-spectator interaction; and intervention – the way in which screens, spectators, and spaces mutually transform each other. Because of this double-sidedness and the interactivity it entails, the city-with-screens warrants an approach to the screens as an architectural interface.

As Anne Friedberg already suggested in her seminal work on the screen, *The Virtual Window*, the *dispositif* of screens impacts on the space in which it functions; the result is an "architecture of spectatorship."[3] She proposes a perspective on

the screen as a tension between the material reality of the built space and the dematerialized imaginary of the images on screen. This paradox of materiality and immateriality she brings in alignment with her earlier observations about the mobility of the image and the immobility of the (cinematic and televisual) spectator. Both are constitutive of the virtual mobility that the spectator experiences when watching moving images on screen, while seated in her chair in the cinema. This architectural conception of the screen already implies, in other words, a paradoxical mobility. In the case of mobile spectators – the navigators in the streets – I want to adopt Friedberg's perspective on the twin paradox of mobility/immobility and materiality/immateriality to investigate mobility that is perhaps more fundamental in relation to interactive urban screens. When Friedberg quotes architect Auguste Perret – "Mobile or immobile, everything that occupies space belongs to the domain of architecture" – she already suggests that not only is spectatorship itself inherently (or only paradoxically) mobile, the architecture of its *dispositif* might just be mobile as well.[4]

As Scott McQuire has shown in his genealogy, the history of the media city is intertwined with the development of modern (media) technologies, and is in its most current phase marked by the convergence of screens and other visual displays and pervasive, digital communication technologies. Following his historical perspective, I am particularly interested in today's influence of mobile and locative media technologies on the connection between the structures and design of urban spaces, the site specificity of screens within these spaces, and the mobility that urban culture implies. For this perspective, the essential properties of these technologies matter less than the specificities of the cultural practices they facilitate. The question, then, is: how do these media technologies offer affordances for a dynamic interplay between screen, subject, and public space, and as such operate as urban interfaces?[5]

We can think of movement and temporality in structures – in media *in* and *as* architecture – in many different forms. Think of the array of commercial, casual, and playful media forms that we also encounter in today's cities, but also recalcitrant art projects, ambitious light pollution effects, and social neighborhood rehabilitation projects. Architectural forms of media range from urban screens that mount screens onto facades; video mapping projects that overlay material surfaces with playfully moving light; fluid architectures that turn buildings into moving structures; perhaps even site-specific performances and temporary installations that turn architecture into scenography. What are the consequences of these dynamic screens that are site-specific and mobile, architectural, dynamic, and essentially performative?

Key words for this approach to screens in the city, then, are transformation, mobility, and connectivity. These terms concern how screens and other media technologies cause changes in urban spaces – and in our practices within and experience of these spaces. Transformation itself lies at the heart of these tech-

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nologies. They intervene in the stability of the built environment and make it appear fundamentally different from other times. Indeed, more important than the perceived novelty of new and "innovative" screens and interfaces themselves is the way they affect our sensibility. Paradoxically, we are becoming increasingly sensitized to the (possible and/or perceived) changeability of the environment. Specifically, spatial design and urban architecture participate in the mobility- and connectivity-based experience of living and walking in the city. They add to, build on, and shape urban mobility. As such, they are part of the infrastructure of the media city. Long before the current ubiquity of digital technologies, however, Michel de Certeau already analyzed the everyday practices of navigating the city. His study mapped our relationship with the urban environment and how we move around within its structures. He suggested that the spatial practice of walking is "to an urban system what a speech act is to language."[6] The current situation would probably have amused, astonished, and even inspired, but not shocked him. To better understand what this relationship between design and interfacing as spatial practices entails, I will address the question of presence and connectivity – the "between places" or a "cartography of connection" – as an architectural issue.[7]

My interest in the current drive for innovation is both theoretical and critical. Ambitions to develop screen applications as new platforms for urban publics are abundant. We can find examples in the way museums try to engage new publics within or outside the walls of their institutions, or in current smart city projects (and rhetoric) built on ideals for civic participation. These ambitions are often based on ideals of interactivity and connectivity and are perhaps the two main promises of digital culture. They distinguish the media architecture of screens from stone-and-wood buildings. Our fascination with technology is historically embedded. It is coupled with an equally historical social ideal of participation in a strong mix of innovation and creativity. However enticing, this ideal also asks for (or demands, in my opinion) an analytical grasp of *how* these works of techno-spatial design activate such an interactive and connective potential. Ultimately, in the context of the city as a cultural and social environment, I seek to understand how they contribute to our sense of "presence." That is important because I see presence as central in the crossing of urban infrastructures, techno-based interfaces, and the possibilities for people to make interventions. For this, I look at the way techno-spatial design of the screen is *performative*: how it shapes the way we act. Hence it is also transformative. Architecture and spatial design inscribe space and thereby transform it.[8]

This is how the three terms that underlie my inquiry in this essay connect: infrastructure, interface, and intervention together define what media cities are and how the screens within those spaces act. Note that the preposition "inter" is present and, I contend, centrally important for all three. For the preposition "infra" in infrastructure also points to the underlying facilitation of interrelation-

ships; we can even call it "inter-structure" to keep this in mind. "Inter" means connection and reciprocity, in all its uses. Just think of internationality, interdisciplinarity, or internet. Infrastructures comprise the assemblages of technologies and materials, such as buildings, media, and screens, that structure mobility and offer potentials for cultural practices of connecting. Interface, next, refers to the places where we connect within this space – with materials, technologies, and with one another. Interventions, finally, are what this interfacing may bring about within that infrastructure, by means of that interfacing. Historically connected to the late-1960s and 1970s political movement in art and performance that aimed to radically change public space, today's interventions can be thought of as temporary public happenings or "public interactives" that, by offering sites for experimentation and interaction, afford forms of engagement and critical thinking.[9] This is the transformative potential of doing that is at the heart of interfacing: a possibility (not a guarantee) for critical participation. I think the relationship between these spheres is important when we speak of media architecture. Because, while we are surrounded by materials, technologies, and structures, it is the performativity of our interfacing with and within that space that matters.[10]

For this perspective on the performativity of design I build on my analysis of the spatial and time-based logic of mobile screens and urban, navigational practices. Here, I align this logic with the transformative and interactive affordances of spatial design and architecture. I have now established a context where mobility and connectivity help produce a sense of presence thanks to the performativity in infrastructure, interface, and intervention. Within this context, I propose we look at temporary and mobile infrastructures of location-based but migrating set-ups or installations. Thus, we can understand how they are designed as public interventions with innovative and transformative ambitions. In the following, I focus on projects that use screens in urban space specifically designed to connect different spaces. In the shaping of meeting places, they make a fluid architecture of sorts. As temporary infrastructures they demonstrate a cartographic logic. I see this logic as inherent in location-based media technologies and mobile practices. And, in line of the wider argument of my work, this is a logic that exemplifies a currently pervasive trope of mobility and navigation in urban spaces.

Mobile Media Architecture

If architecture is both the process and product of the planning, design, and construction of the built environment, or urban space, then the concept of media architecture appears to have a conceptual problem.[11] The problem is that there are no fixed material structures that result from such (media) architectural acts. This is, however, an asset instead of a problem when we consider that precisely

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the distinction between process and product is dissolved in media use. Hence, it is a paradox rather than a contradiction. Paradoxes are productive structures of thought; they raise questions and question thought. They are only apparently contradictory, while in fact they point at the essence of *inter*section: in this case the intersection of space and time – of structure and movement.[12]

For example, projections and video mapping, sensing technologies, kinetic or light-emitting facades extend the buildings not only in temporal and spatial terms, but also extend the haptic and relational qualities of their materiality. These works transform and remake the buildings they engage, even if the materiality of the structures remains intact. Thereby they fundamentally intervene in our standard conception of perception as an act of the eye only. Indeed, these works emphasize how architecture in its performativity makes us look back to a building, but then, the building solicits that looking-back. Moreover, media architecture has a fundamentally haptic quality. This quality makes looking with the eyes alone impossible, for it entices us to (wish to) actually feel the surfaces and the space itself. It does this by "addressing the human body and its dimensional relationships," as Matthew Claudel of MIT's SENSEable Cities Lab has recently phrased it.[13] Also, the extension of materiality and structure performed through projections of light and movement can de-familiarize public space and appear to temporarily overrule the stability of architectural structures. However, paradoxically, as Thorsten Bauer has pointed out, these projections in fact need the stable structure underneath them to have this effect. Bauer speaks of an "after image" that spectators may have of the original structure.[14] This is an extension of structure performed through light only, but with an impact that exceeds the facade alone. They de-familiarize public space and appear to overrule the materiality and fixity of architectural structures.[15]

However, these projects also demonstrate the opposite. As soon as lighting technologies are used to modify the visual appearance of a building, the light becomes part of it. Overlayering the facade, and thereby making that facade into something else, light becomes part of the new architecture, and thus, as a medium it shows its material hand. Indeed, exploring this materialization of light is the life endeavor of the work of Belgian artist Ann Veronica Janssens. She sometimes uses very simple, sometimes very complex technologies to make her point that light is indeed material. She fills chambers with colored mist, for example. What such light projects, and others before it, demonstrate is that what we see is not what *is* but what *appears*. Solid as the building may be, our relationship to it is changeable. These examples attest to an expanding field that includes difference in the status of materiality, of "structure" and process as the product of design. As I have presented it in my book *Mobile Screens*, Janssens showed how what could have been an ordinary building becomes something like a liquid architecture – to invoke Marcos Novak's term – due to solar mirrors that capture light. As a result, the building appears as if sagging under its own weight.[16]

Screens as Urban Interfaces

Urban interfaces make connections – to other places, other realities, and especially, other people. The windows, portals, and bridges to elsewhere are here considered as architectural in order to foreground their congeniality as concepts with the idea of the architectural. In my work on cartographies of mobile and location-based media, or urban interfaces, my perspective on architecture as material design draws on this interplay of product and process. This is inherent in design as the interlocutor between technology and practice. Researching the cultural use of mobile and location-based technologies, it is design that we hold in our hands and design within which we move. It becomes impossible to think of practices of mobile technologies without including the architectural aspect of design. Both are practices of space making and embedded within connections between infrastructures, interfaces, and interventions.

Central here is the space-making, moving, acting, and perceiving subject. In other words, people. This centrality calls for a rethinking of terminology. In media theory we tend to call subjects spectators or users – problematic terms as the former suggests passivity and the latter consumption and instrumentalism. Moreover, both imply fixity of the object, while the former also implies fixity of the subject. This subject has also been called "participant" in more interactive or collaborative endeavors. This term is currently both widely used and also contested. A partnership is implied, yet not unproblematically so, because it is an unequal relationship. For this reason, in an attempt to convey the particularly active relationship with the interfaces used, I have myself proposed elsewhere to use the term "engager."[17]

The audience I am talking about who engage with urban screens are indeed active; they are (co-)performers. And in the context of mobility and mobile practices in public space we are navigators – we move around at will, albeit within the limits and constraints of the infrastructure. And because obviously power structures are in place in infrastructures – just think of traffic lights and the penalization of their transgression, surveillance cameras, and much more – we must acknowledge that there is also regulation at work.

Such searching for the right term is not a futile academic exercise. It demonstrates the implications of the choice for certain concepts over others. Concepts are already mini-theories, implying presuppositions that guide further thinking. More importantly than the introduction of a new term, we must not lose sight of any of the aforementioned aspects of the people who use, see, or engage the urban screens. For now, I depart from the idea that the notion of the urban public comprises these aspects of spectatorial perspectives, forms of agency and participatory possibilities, navigational mobility, and performative potentialities. Moreover, taking into consideration this public – the people who see, act, encounter, perform, and move – helps us focus on the intersection between

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architecture and cartography: the mobility of structure and design in architecture as interwoven with the mobility of navigation in spatial practice.

In order to analyze the performativity in encounters with (mobile) media architecture, let us look at two very different examples – one firmly embedded in a commercial infrastructure and one mobile, playful, and artistic. For a characterization of the functioning of screens, the distinction between commercial and artistic is immaterial. For the first category, I will explore the phenomenon of the selfie pillar – a camera-screen combination or terminal that allows people to take and send selfies from a specific location. This turns the old-fashioned photo booth into a selfie machine for *narrowcasting*. Consider a recent example from Rotterdam by the media company Plustouch. It uses an emblematic micro-architecture of advertising pillars in public space that are fixed yet dynamic, monotonously showing commercial images. In this case, however, instead of using the screen as a display window for advertising, an added camera and Internet connection allows the passing public to use the screen as a mirror, to take selfies, and to send them or upload them to a website.

For an example of the latter category, the playful and temporary set-up, let us look at *The Bridge* – a recent project of the traveling urban screens of Dutch-based mobile media platform Dropstuff. Traveling around in Europe, the screen can be been seen at events, now considered as temporary public spaces such as festivals, and on public squares in Amsterdam, Paris, Venice, Antwerp, and other cities. *The Bridge* – a name that metaphorically invokes the architectural symbol for connection – establishes a video link between sets of two different European cities. A recent installation was set up between Stockholm and Amsterdam for the occasion of the 400th anniversary of diplomatic relations between Sweden and the Netherlands.

Fig. 1: Bi-locational ballet at the opening of Dropstuff's The Bridge *(2014), "on location" both in Stockholm (Sweden) and The Hague (the Netherlands). Image: Dropstuff, 2014.*

The opening presented a *pas-de-deux*, a duet between two dancers in both countries, connecting on screen. This coordination between the far-removed screens occurs with different forms and aesthetics, through video streams, animated game spaces, or abstract, colorful visualizations. This particular set-up of Dropstuff as a mobile infrastructure establishes a temporary architecture based on connection in a different way from the selfie pillar. Yet there are some similarities as well.

Fig. 2: Waving and posing on the Dropstuff screen and the selfie pillar by Plustouch. Images: Dropstuff, 2014; Plustouch, 2014.

While obviously developed with different ambitions and in different frameworks both projects work with location-based technologies, function in an urban and mobile framework, and play with presence, connection, and extension. They do this via online and offline localities, perhaps via, what Eric Gordon has termed, "network localities" or by means of interfaces between the "internet" and "outernet" of which Susa Pop speaks in reference to some media architectural projects.[18] Both, albeit playfully, are premised on, and as such investigate the logic of media or screen-based communication, in particular through the complexity of location. To investigate this complexity, let us consider the aspects of presence, extension, and connection.[19]

Making Presence

The presence of the public – here, the shopping public – is a condition for the selfie pillar to make any sense at all. An interactive technology needs encounters between the interface and its other face; here, that of the individual within that public. In a truly McLuhanian fashion – "the medium is the message" – the snapshots taken by the present user flaunt this presence with an additional prescripted message, "greetings from Rotterdam." This is an emblematic, postcard-like statement of "I am here" that becomes "I was here" when sent. Banal as this message sounds, it is a statement of deixis, but of a specific kind.

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Fig. 3: Greetings from Rotterdam. Image: Plustouch, 2014.

As I have explained in my work on mobile screens and screen-based navigation, the linguistic term deixis explains how language and other semiotic utterances are context-dependent. In fact, as Émile Benveniste has proposed, deixis and not reference is the essence of language, and I would like to add that this is also the case for other utterances such as images. Deictic words, or shifters, function as mobile focal points, often within an oppositional structure such as "here," implicitly opposed to "there." Deixis indicates the relative meaning of the utterance, tied to the situation of utterance, an "I" in the here-and-now. They have no fixed, referential meaning. They are semantically fluid, albeit not empty. Deixis establishes the point of origin, or deictic center, of the utterance: the "I" who speaks, as well as its point of arrival, the "you" who is spoken to. In this sense – symptomatically indicated by the words "origin" and "arrival" – deixis concerns travel. It establishes the performative aspect of navigation. Indeed, deixis frames the statement in temporal ("now") and spatial ("here") terms.[20]

The deictic essence of cartographic logic that we know from public maps, the signage of "you are here" – to assist you in reading the map – is now conceived in the past tense and in the first person. Or is it? A selfie turns the first person (an "I") into a second ("you" in the mirror) and consecutively a third in fixating the

picture of a "he or she." This conflation of identities constitutes a de facto assault on communication. By means of conflation, the act makes the usual turn-taking in communicative exchange impossible. There is no position available for a second person who can become a first when it is, or should be, her turn to speak back. But also by fixating the image of "I," the selfie becomes a static product. And much like people virtually waving goodbye to one another by using a screen at the airport, it signals the paradox of absence, or rather, *non*-presence.

Fig. 4: Screenshot of the online portal for waving goodbye at https://www.schipholuitzwaaien.nl and local screen at Schiphol airport. Images: Nanna Verhoeff.

Secondly, the selfie seems emphatically in the present tense, but this is only instantaneous, and marked thereafter as past when one takes and uploads the image. This, too, makes communication impossible. In real-life navigation, instead, presence is emphatically in the present tense. This is how we can understand such logic of presence and direction bound together. Presence, subjective in essence, is bound to a location. Yet, in the act of marking presence this presence becomes void of subjectivity. Thus, if we generalize from this pillar to all selfies, the communication of selfies goes as follows: "I" becomes a "you" during the process of looking in the mirror; once uploaded, the images present a third person, who becomes an "she or he" to another. This other is the receiver at a distance. Of course, this pillar is meant commercially to engage people in the shopping center while advertising its attraction. Moreover, it demonstrates the logic of the capitalist making of the self into a product. Yet, it goes farther than this. Incidentally, this selfie pillar presents a theory of the elusive presence of the subject in the selfie. Thus, it plays with, and flaunts, rather than critiques, the contemporary embrace of these processes in allegedly participatory forms. Elusive as it is, as a location-based medium this micro-architecture affirms what is essentially the logic of the medium at stake.[21]

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Fig. 5: "Stretching it," a mini-art-game developed for The Bridge *that uses the motion-capture of the camera with animation for connecting players. Developed by Priscilla Haring, Sebastian Michialidis, and Stijn Kuipers for the Venice Biennale 2013. Image: Dropstuff, 2013.*

Seen from the perspective of the selfie pillar, the other example, The Bridge, seems to be more layered. The motion-capture Kinect camera confirms through life transmission one person's presence in an environment where she is not actually present. To be precise, the camera registers the movement of the person in one space, on one screen, who is then represented on a screen in animation or photographic similarity in another space. With the added process of digital coding, the principle of a televisual regime of representation is changed from photographic capture to animation.

Nevertheless, one's presence in one location influences movements in the other; that is, one's presence, albeit virtual, makes things happen elsewhere. There is a paradox here as well. On the one hand, this presence is extended; on the other hand, it is denied. The "I" and "you" meet on the screen, both as a third person. Your wave is a representation of a wave. Actually, you stand in for that other place. You are, as such, a representation of "there." In addition to the mirror image, and essentially different from the cinematic image, as avatars on screen, the image is this extension of "you" who walks over that metaphoric

bridge and back. It brings into presence, yet also emphatically denies this presence. Presence is qualified by the potential of turning subject positions as traditionally expressed in grammatical persons, around and conflating them, as well as casting presence in the past. This is at least paradoxical. Interfaces position as central the connection between technology and subjects in inter-action. In this sense, interfacing is an affirmation and simultaneous creation of both subjectivity and presence – even if this process is fleeting and paradoxical. This presence is where the transformative performativity of these screens culminates as an intervention in the social domain.

Building Connection

This intervention is important because presence is a condition from which we make connections. Yet, as these two cases make clear, presence becomes highly complex in the process of mediation. Location-based media technologies are founded on an organization in which a presence is mapped in relation to a destination – however abstract this destination may be: another location, an interlocutor in communication terms, information, or data. That is why the concept of navigation is so central to my argument. This logic that underlies navigational practices makes presence inherently temporary, mobile, and transitory. In the selfie pillar the whole triple-act of posing, shooting, and posting shows this mobility. The image of one's presence can be transported, digitally, to online platforms of exchange. A selfie, indeed, is perhaps always already shared, made for the connection with others, albeit in a somewhat damaged form of communication.

The Bridge with its metaphoric name foregrounds building connectivity. With the different forms of screen content, it makes for a playful investigation of what connectivity can be. Communication occurs between subjects in different locations in different representational forms. I mentioned video streams, animated game spaces, and abstract, colorful visualizations. Additionally, as communication between subjects, locations, and regimes of representation, the project, as I mentioned earlier, has also been embraced for celebrating diplomacy on the occasion of the quadricentennial of Dutch-Swedish relations, thus making it an institutionalized and political form of connection.

But connection is never non-committal. To what purpose, or with what result do we connect? With so many projects, technologies, and forms of design being created to engage with the affordances of connection, a critical question we may ask at this point is: this is all great, but to what end? Who benefits, what is being exchanged, what is the transformative power, what is the surplus value of what is created in this process of connecting? The goal of the first project, the selfie pillar, seems straightforward: a playful gimmick for the shopping center to entertain and hence attract more shoppers. Yet, in this act, the character of the

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space has also transformed into a space where one can do things, rather than just walk through it. The one-way connection, however, loses this somewhat playful (and I really do not want to imply "empowering") aspect and transforms this into a simple bulletin posted on different social media websites.

At first sight, the connections afforded by *The Bridge* seem to allow for a more two-way communication. However, it strikes me that here, too, the playful engagement with the screen and location-based technology for interaction is more self-affirming of presence than really making a connection that goes both ways. It is not really a bridge, and the architectural title contributes to obscuring this fact. Indeed, a cartography of connections does not guarantee exchange, much less transformation. Worse, connection can become a hollowed-out extension of presence. This amounts to an extension of the first person into all persons; a hugely self-centered worldview, or at least, experience.

I have said earlier that location-based subjectivity calls forth a second person, which is the surrounding space transforming constantly under the influence of the subject's displacements through her mobility. Presence and connection, inherent in media processes, are location-based. They take place. This logical necessity is, however, slightly undermined, or at least challenged by projects like *The Bridge*, where the subject becomes an avatar on screen. Perhaps I can say that these projects, and others of this kind, *make* place, and in this sense they are architectural; but they do not necessarily *take* place. Although they are temporary and thus constitute events, their acts of (performative) place-making makes them architectural. The locations themselves where the screens are positioned seem clear, with their extensions to other cities or to online spaces.

Those extensions, however, immediately question the stability of location. Not only its identity can change, as in *The Bridge*; also, as in the selfie pillar, the nature of the location itself changes. Without moving an inch, the surrounding space transforms from a regular shopping center into a place of fun, experiment and, as we have seen, a reconsideration of what the self really is. And from the vantage point of *The Bridge*, the surroundings of the screen become part of the screen space, as well as, in the playful encounters, meeting places.

This is the more easily achieved as these kind of projects tend to be installed in squares and other dense public places. The social ambitions of these projects make use of, and reflect on, the specificity of urban spaces as potentially social spaces, albeit it a sociality that needs to be animated to really occur. In carto-graphic terms, then, an extension can be seen as another place, an elsewhere, connected to a here, thus establishing a bi-locality. In terms of mobility this else-where can become a destination as we upload our selfie to a website. Or, when we cross the bridge to go to another square in a different city. In this conception, extension covers, but does not replace location. Hence, if the building of connec-tion is an intervention in the social domain, it remains to be assessed, piece by piece, what the meaning or impact of this connection is.

Conclusions: Interface, Infrastructure, and Intervention

But the forms of mobility in media architecture I have mentioned at the beginning are too variegated to be limited to screens set up in urban squares or other spaces of traffic. After all, my two examples, instructive as they are to reconceive of subjectivity and its relation to person, tense, and space under an architectural logic, extend space and time by means of screens. The question about media architecture concerns the way principles of presence, extension, and connection, which I find central in navigation, structure and intervene in existing organizations of space. We have encountered these structurings in projects that turned out to have theoretical – and even touch on social-political – implications. The temporality implied in media technologies and their inherent mobility underscores the performativity of design of media and architecture. I see this performativity as inherently depending on mobility. Between architecture as interface – a media-theoretical term – and as temporary object somewhat in-between infrastructure and intervention, the design that allegedly precedes it is actually performed in it; process and product cannot ever be distinguished in any rigorous way.

What, from our perspective in the present, appears as a contemporary innovation, however, also draws attention to aspects of architecture and media, and the mobility this connection entails, in a past that, rather than being long gone, is still with us. Just think of cathedrals, stained glass windows, baroque *trompe-l'oeil* and architecture, sound and light plays, as Erkki Huhtamo has reminded us from his media archeological perspective. In a similar vein, Uta Caspary has pointed out the (historical) connection between urban screens and media facades, on the one hand, and the architectural ornament, on the other. To think of these precedents is a good way to relativize the novelty of contemporary interventions, while recognizing the specificity of each. The navigational, as a practice of space conceptualized as situated *between* media and architecture, demonstrates the ambition of reflection on and revision of such cultural habits. This is why the question of intervention is important: what are the transformations of public spaces that make the acts of interfacing truly performative?[22]

We have seen the implications of a commercial use of participatory technology. Media cities are being made, built, and shaped by means of technologies and newly emerging platforms and opportunities for shaping surroundings and, through this, urban practices. This speaks to the question of how changes and innovations in infrastructure create interfaces with affordances for making presence and building connections. This brings me from a theoretical to a critical perspective. The goal of innovation itself, when used in an unreflective manner, supposes improvement of the lived environment, especially in a social context. The chain of innovation to interactive affordances ("we can do things") to participatory empowerment is, however, not self-evident. And not every interface creates an intervention.
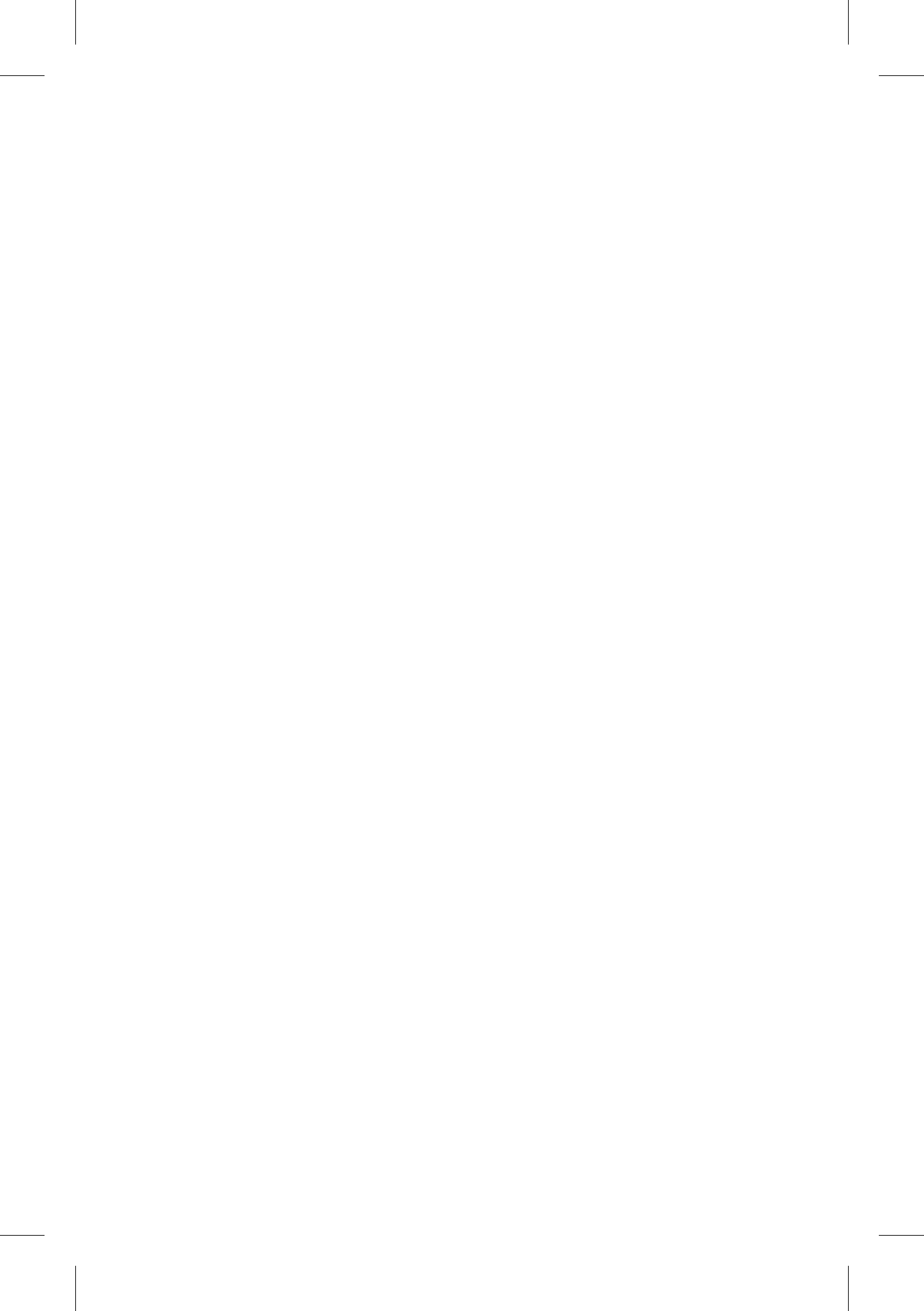
NANNA VERHOEFF

Fig. 6: The disconnected screen is blank, the portal closed. The screen literally becomes a facade; just a screen, not a window. Image: Dropstuff, 2014.

PART III

Theory

The Screenic Image: Between Verticality and Horizontality, Viewing and Touching, Displaying and Playing

Wanda Strauven

Prologue

In February 2014, Coca-Cola released an advertisement for a fake product, the so-called Social Media Guard. Satirizing and pretending to cure today's social media addiction, which has led to "checking your phone every eight seconds,"[1] the soft-drink company launched the idea of a huge dog collar, in red, with the recognizable white wave of the brand, that "forces" you to look up and to look your real-life interlocutor (friend, fiancée, child) in the eye. The Coca-Cola commercial became a hit thanks to the social media, as so often happens with these types of videos that are criticizing the social media. Similarly, over the last couple of years, many cartoons ridiculing the new anti-social trend of phone-snubbing or *phubbing* made their appearance online.[2] A beautiful example is *Twitter* (2009), a magazine cover illustration by Kyle T. Webster, depicting a young couple in love on a bench in a park, the boy incessantly tweeting from his mobile phone, while the girl looks up to a "real" bird tweeting in a tree.[3] Or, more ludicrously, Dan Piraro's satirical depiction of the afterlife shows future heaven dwellers who, to the astonishment of the old angelic generation, "just stare at their hands in despair."[4]

Quite remarkable, in this context of media-critical media productions, is the black-humored animated short by Xie Chenglin, in which very simple, hand-drawn characters walk bent through life, looking down at their mobile devices, causing absurd encounters and fatal accidents. In May 2015, after winning the Annual Award of China's Central Academy of Fine Arts, the video went viral in the Western World under various titles, such as Life in the Bow, Phubbing Life, and Smartphone Life.[5] The original Chinese title is 低头人生 (Dītóu rénshēng), which literally translates as "A Low Head Life." Dītóu refers to the act of lowering one's head, usually denoting modesty or humbleness, but also suffering or being depressed.[6]

Fig. 1: The arrival of smartphone users in heaven. Reprinted with permission of Dan Piraro.

While this essay will not focus so much on the asocial behavior of social media users or so-called *phubbers*, it will discuss, in depth, the act of looking down that accompanies the screen touching practice.[7] My analysis will not be limited to smartphone interactions and/or applications; instead, I intend to trace the first contours of a genealogy of the vertical viewing mode by looking at a (historically mixed) selection of what I call "table installations," which are horizontal *dispositifs* inviting the user (or spectator, or museumgoer) to look down. By confronting these types of installations with vertically organized viewing *dispositifs*, I aim at reconsidering the relation between the tactile and the visual, more particularly between the act of screenic touching and the act of screenic seeing. Ultimately, I would like to rethink the image in the era of the post-image, to rethink what remains of (or is added to) the image, especially when it appears to us on a screen. What happens to the screenic image when it is not only looked at but

also touched upon? Is it still (merely) an image? Or has it become something else, something that goes beyond the image-as-image?

Such questions clearly interlink artistic and technological issues, as the selected table installations also do. They all belong to an alternative history of user interface, not necessarily restricted to the world of computers and engineers. Nevertheless, my discussion will take off in the research labs of Xerox PARC, where, in the early 1990s, attempts were made to bring about the shift from frontal viewing to vertical viewing by means of the so-called digital desk. Yet it somehow failed...

Four Table Installations

Developed in 1991 by Xerox EuroPARC, the European branch of the Xerox PARC research center, the digital desk was a user interface projected on the real desk. It was supposed to replace the desktop metaphor, which Xerox PARC introduced in 1970. As explained by its inventor Pierre Wellner, the digital desk aimed to overthrow the electronic desk and its typical frontal viewing mode by turning the physical horizontal desk into a workstation, into a surface to be touched or physically worked upon.[8] Hence, Wellner got rid of the computer screen and relied on the cinematic principle of projection. The computer-driven projector is mounted above the physical desk, directed downwards. This setting makes for the merging of electronic objects and real-life objects, such as paper documents and the hand of the user, on one and the same (horizontal) plane. The Xerox PARC researchers also envisioned some future tactile applications, including a selection mode that might be defined as the earliest instance of the "pinching" gesture that we now know so well from our iPhones and iPads.

If, from today's perspective, the digital desk might seem to be a winning principle because of its invention of multi-touch gestures and its looking down attitude, in the early 1990s it was doomed to be a dead end in the development of the touchscreen technology. The Human-Computer Interaction Lab at the University of Maryland, for instance, explored more successful strategies of turning the monitor into a high-precision touchscreen, sticking to the principle of frontal viewing typical of the desktop computer. They thought of the touchscreen not so much in terms of a workstation, but rather as an "input device," a "selection device," or a "pointing device" that was supposed to entirely replace the mouse.[9] It is important to keep in mind that the early touchscreens were mostly to be found in the public sphere, for instance, as sales kiosks, public information services, as well as in museums. The phenomenon of the "museum kiosk," which allows the museum visitor to obtain further explanation about the exhibits, is such an (early) application. As one of the researchers at the University of Maryland puts it: "mice were unpractical in public settings, so touchscreens were the natural choice!"[10]

Also in the early 1990s, Canadian artist Janet Cardiff conceived a sound installation, entitled *To Touch* (1993). Consisting of an old carpenter's table, surrounded by small audio speakers mounted on the walls of a darkened gallery space, the installation, as implied by its title, was supposed to be touched. By running their hands over the rough wooden surface of the table, visitors would activate photocells that, in turn, triggered specific sound bites – ranging from human voices, whispers and dialogues, to music and environmental sounds. Visitors could actually orchestrate the sound collage or create various acoustic layers by the simple motion of their hands. As the Southern Alberta Art Gallery puts is: "Thus, the spectator's movements generate the table's eerie voice, which speaks in layered, partial and provisional stories and sounds. *To Touch* foregrounds touching, listening, and imagining over looking."[11]

In her seminal article "Video Haptics and Erotics," published in 1998 in the British film journal *Screen*, Laura Marks refers to Cardiff's installation. She mentions it in a footnote, in its 1995 exhibition at The Power Plant in Toronto, to illustrate her point that "in recent years, artists in many mediums have taken renewed interest in the tactile and other sensory possibilities of their work, often to the diminution of visual appeal."[12] For the moment, I want to retain this idea of diminishing the visual appeal. It should be stressed, however, that Marks's article is very much about the *visual* qualities of video art, for which she introduced the term "haptic visuality." As opposed to optical visuality, haptic visuality "draws from other forms of sense experience, primarily touch and kinaesthetics."[13] Yet, it does not involve direct touch. Like in Alois Riegl's art theory, haptic refers to the sensation of touch or, even better, to the activated memory of the sensation of touch. In short, haptic visuality is a form of embodied spectatorship, a form of seeing in which the body is addressed as a whole, without involving literal screen or surface touching. It corresponds to the visual regime of closeness, fragmentation, and flatness. And maybe in this sense it is indeed a prelude to the decomposition of the image, to the diminishing of the visual appeal, to the era of the post-image or the post-visual. Important for my argument is that Marks locates her discussion in the larger context of "cultural dissatisfaction with the limits of visuality";[14] that is, the dissatisfaction with the visual as the most dominant mode of the 20th century.

The following example of table installation brings us to the 21st century. It is an interactive art installation that I saw at the Open Studio of the Jockey Club Creative Arts Centre in Shek Kip Mei, Hong Kong, in September 2008. It consisted of a huge touchscreen installed on four feet like a table. With my help, my four-month old daughter "visited" the piece. She used both her hands and her feet to interact with the artwork, standing on the table and making appear colorful concentric circles around the touched areas. I believe the piece was entitled *In Table*, but I have no name of the artist and no further details about the technology involved.

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Fig. 2: Touchscreen-based table installation at Open Studio, JCCAC, Hong Kong, September 2008. Source: personal archive.

Time-wise, we are in between the launches of the iPhone (2007) and the iPad (2010). Although the sizes do not match, it comes close to the Microsoft Surface 1.0 platform (nowadays called Microsoft PixelSense) that was released in 2008 and that allowed for multi-touching by one or more people and with real-world objects, like a glass or a cup. In those years, the Microsoft platform indeed made its appearance as a very fancy bar table. The Hong Kong artist provided the table installation with a white glass, which functioned quite well as a cue for action. Without any implicit invitation, visitors would pick up the glass and intuitively discover how to interact with the artwork, how to make it come "alive." When the table remained untouched, it was just a blank dark screen. It is not unlikely that its touchscreen technology was vision based, precisely as in the case of the Microsoft platform, which was provided with a rear-projection display and near-infrared cameras underneath its surface.

The last example is again connected to an anecdote from my personal life. In May 2012, my family and I visited the Torre Tavira in Cadiz, Spain. This old watchtower, built in 1778, now hosts one of the city's main tourist attractions: a camera obscura that projects a real-time image of the city on a white concave horizontal screen, like on a table. I had visited camerae obscurae before, but the guide of the Torre Tavira did a very good job in showing the potentially interac-

tive dimension of this centuries-old *dispositif*. Not only was she pointing with a stick to the main buildings of the city, but she also used a little piece of paper to "play" with the people on the street, making them jump or dance in the air, as it were.

Whereas the Cadiz camera obscura is a modern-day installation, inaugurated in 1994, the invention of the horizontal viewing table can be traced back to at least the early 19th century given its illustration in Abraham Rees's *Cyclopaedia: Universal Dictionary of Arts and Sciences* (Plates, vol. IV, 1820). The camera obscura itself dates back to at least the 10th century. Especially since the Renaissance discovery of its potential as a drawing aid, the camera obscura's projection surface became a true "media screen" or "display screen" within reach, for the images were projected on a canvas or a sheet of tracing paper to be literally touched and drawn upon. In other words, the screen was already tangible (and touchable, and touched) centuries ago, long before the invention of the touchscreen.

Tactile Interaction and Image+

One could argue that we need to make a distinction between the "touchable screen" and the "touchscreen." The touchable screen would be a screen that *can* be touched, whereas a touchscreen is a screen that *must* be touched. For instance, Nanna Verhoeff insists on this point when she writes: "The aspect that most clearly distinguishes the touchscreen from other screen devices such as the cinematic screen, or the television screen for that matter, is the fact that spatial proximity of the screen not only *can* involve the user's body, the screen *must* be touched in order to navigate within the screen interface."[15] Such a definition, however, should not be restricted to the technological touchscreen of today. For the horizontal screen of the Torre Tavira may, or rather *must,* be moved up and down to focus different distances and, thus, to better navigate through the cityscape. Also in the case of Cardiff's installation the distinction between touchable screen and touchscreen does not really hold. It is definitely not a touchscreen, but I would say it is *more* than a touchable surface; it is a surface that *must* be touched.

More generally, it seems that because of its horizontal disposition a table installation invites to engage in a tactile interaction, if not automatically at least in a much easier way than a vertically mounted screen would do. This might have to do with the fact that our hands are at the table height, that we tend to support our hands on a table when we are standing close to or around it, or even more simply that we are accustomed to use a table as a touchable surface (for working, dining, drawing, etc.). Another implication is that while touching the table installation our eyes are (almost) automatically directed downwards. The frontal viewing mode, typical for a museum visit, is interrupted or converted to this

seemingly more engaging way of looking, which we could define as "hands-on looking."

In terms of vertical viewing, Cardiff's installation seems to be an exception. Or rather, its sound feedback might make the visitors look around. Yet, there is nothing to see. Of the four table installations, *To Touch* is the one that is less about vision. But like the other tables, its technology is still vision based, or at least light sensitive. The hand motions are registered by electronic photocells that subsequently trigger the sound bites. Also in the other table installations, the key element, or key actor, is light – whether it is the invisible infrared light, the electric light bulb of a projector, or sunlight. But what about the screenic image? What about its aesthetic value or artistic properties?

The two computer-based tables, the Hong Kong artwork and the digital desk, are good illustrations of the subjection of the image to the rules of the non-visual (or post-visual) regime of the present day, at least if we follow the line of argumentation proposed by Jonathan Crary in his book *24/7: Late Capitalism and the Ends of Sleep* (2013): "To be preoccupied with the aesthetic properties of digital imagery, as are many theorists and critics, is to evade the subordination of the image to a broad field of non-visual operations and requirements."[16] Crary is concerned with the circulation of images in terms of time-management, or rather self-management and self-regulation. He observes that "more images, of many kinds, are looked at, are seen, than ever before, but it is within a [Foucauldian] 'network of permanent observation,'"[17] because, very simply, our acts of vision are converted into data information. While I share Crary's view regarding the inappropriateness of reducing the digital image to its aesthetics (or visual?) qualities, I have some problems with the notion of "subordination" in the above quote. The idea that today's image (the so-called post-image) is subordinated to other mechanisms seems to imply that it is hierarchically lower than the old image (the "real," visual image). Or at least it seems to say that the old image was better in not being subordinated to external factors (which is, of course, not true).

Instead of thinking of the new image as "post-image," which connotes not only a (non-reversal) chronology but also a devaluation of its original qualities (such as its "visual appeal," to use Marks's phrasing), I prefer the notion of "image+," which is a term that I have picked up from graphic software programs. Such a notion may help us to think of the screenic image as enrichment, as something in addition to the visual. In other words, today's image would no longer be just an image. Instead, it has become something that goes beyond its visual appeal, that is no longer there to be *merely* looked at. This is where the act of screenic touching can reinforce the act of screenic seeing. By touching the images, the images become literally (or physically) something more than a visual representation. Such an operation is clearly at stake in all of the above discussed table installations. Even the real-life, real-time images projected

on the horizontal viewing table of the camera obscura exhibit image+ properties insofar as they are played with and transformed by the touching hand (or stick, or little piece of paper).

To some extent, this new type of image, which is not really new as the experience of the camera obscura viewing table reminds us, can be related to Harun Farocki's operational image: a functional or instrumental image that is not meant to be looked at, but that serves as part of a process, a process of executing an operation. As Pasi Väliaho puts it: "[Operational images] contribute to the execution of a technical, industrial, military, or some other kind of operation, for instance, calculating and predicting the average paths of consumers, or pattern recognition in machine vision used in assembly lines or in so-called smart bombs."[18] Thomas Elsaesser has defined Farocki's operational images as "images on the cusp of seeing and acting," pointing out how they are "sets of instructions" or "visual cues for action."[19] However, the typical operational image, such as the military image or the surveillance image, is already part of the action itself. It might rather need a translation from action back into vision, for the layman, to be understandable (or readable). Furthermore, the operational image does not necessarily exist only on a screen, it is not per se a screenic image.[20]

I would like to claim that any type of image, not just the technical or functional image, becomes an image+ when displayed on a screen within reach, a screen that can be touched and that is touched, for further action. So, the new image is indeed a "cue for action," maybe more, or more directly, than Farocki's operational image. I will come back to Elsaesser's redefinition of the image as a "cue for action" when addressing the dimension of play, which is another point of divergence with respect to the original meaning of the operational image. When drawing the attention to children's interaction with screens, I will discuss how the image is turned into a non-functional image, an image that does not operate at all.

Insisting on the fact that the image+ is a screenic image, I consider today's screens as surfaces of and for action. As Francesco Casetti argues, screens have become "transit points"; that is, places where "free-floating images stop for a moment, make themselves available to users, allow themselves to be manipulated, and then take off again along new routes."[21] Like Crary, Casetti is not telling us that we live in a world without images, on the contrary, the image production (and especially the self- image production) is increasing like never before. But instead of really looking at the images on our mobile screenic devices, we are more concerned with manipulating data and transferring information (to social network sites, for instance) and this is precisely the connection with the operational image. One could put it, simply, as follows: the new screenic image is an invisible image, since it only truly exists as data, or as code. By clicking icons on the screen we might have the illusion of making the invisible image visible again; at the same time, it also tells us that the image (as image+) is just a gate to something else, away from that particular image (as image).

Vertical (Desktop) *Dispositifs*

Paradoxically, the image+ is turned back into an image-as-image, an image to be merely looked at, by some contemporary artists who consciously rely on the frontal viewing mode. This leads to a rather complex problematization of the image. A good example is the video installation TOUCHING REALITY (2012) by the Swiss artist Thomas Hirschhorn. In a five-minute long video we watch an index finger scroll through images on a touchscreen device. The images are horrifying photos of mutilated, blood-covered bodies, on which the index finger, with the help of the thumb, zooms in performing the very recognizable pinching gesture. Despite the title TOUCHING REALITY, the index finger does not touch anything; that is, it does not touch *any thing*, any mutilated body of the brutal reality of war and murder. It merely glides over the material surface of a smartphone or an electronic tablet; it touches a touchscreen without touching what is on display. TOUCHING REALITY points to the contradiction inherent to many contemporary touchscreen-based devices that, despite their hands-on operability, create more detachment. Or, in the artist's own words, the new touchscreen gesture is a "gesture that seems to be a gesture of sensitivity but at the same time is a gesture of enormous distancing."[22]

Hirschhorn reinforces the distance by deliberately opting for a non-interactive installation that excludes the spectator from engaging directly, tangibly, with the artwork. The touchscreen footage is displayed on a non-touchable projection surface. As a consequence, the typical vertical viewing mode of the smartphone or tablet is reversed to frontal viewing, putting quite literally the spectator in a contemplative, non-engaging position. And the image becomes again an image-as-image, an image to be looked at. Yet, this image-as-image is a problematization of the image; that is, a visual representation of the image as non-visual (or post-visual) image. To put it differently, TOUCHING REALITY is less about the images displayed on the touchscreen device than about the gesture swiping through those images by which their status as "pure" image is changed, transformed.

A connection can be made with the recent phenomenon of desktop cinema, as explored for instance by Camille Henrot in her 2013 award-winning video work GROSSE FATIGUE, which shows the hands-on searching for mythical images on the internet and in the prestigious collections of the Smithsonian Institution in Washington, D.C. Henrot calls her performance an "intuitive unfolding of knowledge," which results in a 13-minute video meant for frontal viewing, precisely like in the case of Hirschhorn's installation. The term "desktop cinema" or "desktop documentary" has been coined by film critic Kevin B. Lee, who picked up the idea from Henrot in order to apply it to his own video essays. Lee defines the "desktop documentary" as a technique that "acknowledges the internet's role not only as a boundless repository of information but as a primary experience of reality."[23] In other words, these kinds of documentaries are no

longer about the representation of reality, but about creating reality itself – through real-time data and/or image searching. The outcome, however, is a visual display to be looked at, to be absorbed by a non-interactive spectator.

The term "desktop cinema" does not refer to the physical desktop, as in the case of the digital desk, but to the desktop computer. The documentaries (or video essays) capture the actions taking place on the monitor of the desktop computer, which is standing vertically (and therefore is looked at frontally). A special screen-capture app is used that allows to capture not only a still image of the desktop, but also the movements unfolding on it, such as searching and clicking, multiple windows opening and closing, zooming in and out, etc. In other words, it is a simple recording of the screen, of what happens on the screen. Since we see the researcher searching, it is like having a secretive look into his or her creative (or intellectual) process. As spectators we somehow become part of that process, because we need to take in all the operations. But we keep a safe, contemplative distance. Moreover, unlike Hirschhorn's Touching Reality, we do not see the touching hand in action, since there is no physical screen touching taking place, only a distanced touching by means of a mouse. In fact, the screen is not a touchscreen.

The Screen as Playground

The question remains whether or not a touchscreen-based display/*dispositif* enhances the image+ properties of the screenic image. Here, I would like to return to Elsaesser's redefinition of the image as a "cue for action," which was – interestingly enough – suggested to him by a seven-year old young girl. In his article on "The Return of 3-D" (2013), Elsaesser narrates the following anecdote:

> I was sharing with friends some photos of us all many years ago that I had digitized and put on my laptop. One of their daughters was standing next to me, keen to be part of the scene. But instead of looking at the picture and asking who, when, or where, she took the mouse, pointing the cursor at the picture. When nothing happened, she lost interest even though it happened to be a photo of her parents when they were young – that is, before she was born. In other words, for her generation, pictures on a computer screen are not something to look at but to *click* at – in the expectation of some action or movement taking place, of being taken to another
> place or to another picture space.[24]

And Elsaesser adds: "The idea of a digital photo as a window to a view (to contemplate or be a witness to) had for her been replaced by the notion of an image as a passage or a portal, an interface or part of a sequential process – in short, as a cue for action."[25] This anecdote connects the image+ properties to the

indirect touch of the cursor. In other words, the tendency of touching images for further action started well before the launch of the iPhone and the iPad, or more generally before the pervasion of the touchscreen. Paradoxically, however, the direct touching of the screenic image seems to enhance the awareness that we are not touching the image itself, but something else; that is, not the image-as-image, but the image as gate, that will lead, by touching it, to something else.

Today's children are growing up in a world where the touchscreen has become the default technology for the screen. Given their very early familiarization with touchscreen-based devices, such as smartphones and tablets, one of the main challenges seems to have become to find out the difference between a touchscreen and a non-touchscreen, between a clickable icon and non-clickable icon. Here, I would like to recall another anecdote from my personal life. In September 2014, I was at the Water Design event in Bologna with my six-year old daughter and her new school friend. In one of the exhibition rooms, an ordinary computer screen stood hidden in a corner. Its display was clearly no artwork, but a rather boring non-interactive presentation about a research project. It nevertheless attracted the attention of the two girls who immediately started to touch the screen. I believe that they were not trying to find out whether it was a touchscreen or not, they just took that for granted (mistakenly). They were touching the screen, because they were expecting that this would take them elsewhere, from one clickable icon to the next. Like the girl in Elsaesser's anecdote, they were not interested in the image (or the information) displayed on the screen, but only in the action that might happen by their act of touching.

On the other hand, children are not only action-driven in their practices of screen touching. I would like to suggest that for today's children the screen is like a playground – a playground where touching becomes a creative, imaginative act, to be understood as a strategy of the pretend game. I am not so much thinking here of kids playing games on iPads and other electronic devices, but instead of children's playful interaction with bigger and smaller projection screens/surfaces in public spaces. Their playfulness is most manifest when they interact (or *pretend* to interact) with non-interactive installations. At the above-mentioned Water Design event, the two girls together with a younger sister engaged with a shower installation, entitled *Get Closer!* Designed by Diego Grandi for Zucchetti, this installation included a non-interactive animation video that was projected on a huge wall and shown in a loop. The repetition, without any variation, did not stop the girls from touching the projected images. Their interaction somehow increased after each repetition, when they started to understand the little narrative and tried to choreograph their actions on time, so that they could, for instance, take a "real" shower (by standing, at the right moment, under the image of the water splash).

Fig. 3: Children interacting with a non-interactive installation at Water Design, Bologna, September 2014. Source: personal archive.

Why are these girls (and other kids) touching the projected image? Is it only because they expect that their touch will make something happen, like on a "real" touchscreen? Perhaps initially, yes, but when they realize that the installation is not interactive (and, surely, they realize it quite soon), why do they continue touching it? This is the same question I ask myself when watching, over and over again, Jean-Luc Godard's homage to the early rube films in his 1963 film LES CARABINIERS. It is the scene where one of the riflemen, Michel-Ange, goes to the movies, climbs on stage and tears down the screen. This scene continues to haunt me, mostly because of Michel-Ange's persistence in touching the screen, right before he tears it down.[26] On screen a society lady is taking a bath. After climbing on stage, Michel-Ange jumps a couple of times to look over the edge of the bathtub and starts caressing the lady, first her face, then her naked legs and arms. What is so striking is that he does not interrupt his own act of touching. He goes on touching the projected image of the society lady's leg, as if he were not feeling that he is not touching a human body (but just the screen). I would argue that, like the children, he is *pretending* he is feeling a real, solid body. And he does not need to be familiarized with the touchscreen to be able to do this. One could also say that this Godard scene is no longer about the image as visual image, but rather about the image as imagination.

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The meta-filmic image of LES CARABINIERS is an image+ insofar as it is a gate to something else, to something that is not physically there to be touched, but that we can pretend to be there to be touched. As in the case of the children's interaction with non-interactive installations, it is a non-functional image, an image that does not fully operate, but it becomes operational thanks to the act of imagination. Imagination should be understood here in the original sense of the word, as a concrete practice of image making, of putting into an image (as in the Dutch ver-*beeld*-ing).[27] Children's imagination is not just a fantasy or mental fabrication; their imagination is always put into practice; that is, in their play the imagined is (already, immediately) realized. In the above-described situations, the child's (and Michel-Ange's) act of imagination turns the image into an image+.

Fig. 4: *Smartphone user looking down while texting on a text-walking lane in Antwerp, June 2015. Courtesy of Irina Schulzki.*

Postscript

One could wonder if this is still a screenic matter. Maybe we need to think rather in terms of "surface," following Giuliana Bruno's quest into media's materiality. In her latest book *Surface: Matters of Aesthetics, Materiality, and Media* (2014), she introduces the notion of the surface as a "place of connection," a "meeting place." Quite different from Casetti's notion of the screen as "transit point," which stresses the fleetingness of life, Bruno wants to draw the attention to the very material (and durable?) contacts we make in and through our media interaction. She writes: "The reciprocal *contact* between us and objects or environments

[...] occurs on the surface. It is by way of such tangible, 'superficial' contact that we apprehend the art object and the space of art, turning contact into the communicative interface of a public intimacy."[28]

The idea of "public intimacy," awkwardly, brings to mind the *phubbers* of my introduction. Is it possible to think of their despicable contact with smartphones in more positive or constructive terms? Maybe by means of a material "place of connection"? In the city of Antwerp, Belgium, they found a funny, playful way to "connect" smartphone-addicts via special "text walking lanes" that run through the historic center (on sidewalks, in pedestrian areas, and across a shopping center).

Supposedly this track, delineated by white lines, would help to avoid collisions on the street, among people or with any kind of obstacle. It turned out to be a gimmick, a marketing stunt, by a local mobile phone chain store called Mlab, which got into trouble for breaking the Belgian law.[29] One year earlier, in the summer of 2014, special lanes for cellphone-users were already created in Washington, D.C. as part of a social behavior experiment.[30] What remains of both projects are pictures taken by cellphone-users, pictures that were posted online and that went viral. In other words, from the "superficial" contact with the urban environment (feet on the street) we are back to the screenic image, an image+, taken by *phubbers* while looking down.

From Screen-Scape to Screen-Sphere: A Meditation *in Medias Res*[1]

Vivian Sobchack

> One needs to enlarge the frame of description and know how to draw –
> behind the back of the spectator, so to speak – a second screen on which the
> osmotic exchange between the so-called spectator and the events on the
> primary screen becomes visible.
> – Christiane Voss[2]

My epigraph, like all of them, is taken out of context. Nonetheless, although in the service of a very different argument than my own and focused only on the cinema, its charge that we need to enlarge the frame of our description of screens has been both provocation and heuristic to my broader project here. In the contemporary moment, in the middle – and muddle – of screen technologies that have radically changed over a relatively short period of time (changing us as well), how might we respond to this charge? By now, the epigraph's expressed desire for a screen "behind" as well as in front of the "so-called spectator" has been literally – and exponentially – realized. Screens today not only watch and display us from behind as we watch the display of others in front, but they also do so from the front and the sides and above, and even sometimes (perhaps perversely) from below. Moreover, given the ubiquity of screens that surround us at every turn, the epigraph's hierarchical positioning of a "primary" and then "secondary" screen seems antiquated – as does the straightforward and static spatial and visual positioning between the two. Both spectators and screens are primarily mobile and responsively "smart" in relation to each other now, their movements and interactions almost completely destabilizing the fixed position and physical passivity initially associated with watching cinema (or television) from a distance and sitting down. All of this movement and interactivity are hardly conducive to the kind of reflective scene the epigraph "draws." In sum, screens today (and their exchanges with each other, and "osmotically" with us) are less passively reflective than dynamically recursive, reflexive, and refractive – that is, their various capacities and algorithmic "subroutines" are dependent upon the operations of a systemic whole; they are self- and system-referential;

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and their audio-visual displays are deflected and diverted in multiple directions and across a variety of "formats" and "platforms."

As screens have multiplied and converged despite their apparent dimensional and functional differences, they have only further complicated, compounded, and confounded our attempts to describe them. They now circumscribe and comprehend us more fully than we comprehend them. Indeed, as I will argue here, they have reconstituted what was once a "screen-scape" into the surround of a systemically-unified, if componentially diversified, "screen-sphere" (the structure of which will be addressed later in this essay). No longer an occasional, if significant, part of our lifeworld, screens now *are* our lifeworld – and their historical expansion has both ontological and epistemological implications. That is to say, we live today primarily *in* and *through* screens, rather than merely *on* or *with* them. They no longer only mediate our knowledge of the world, ourselves, and others; beyond representation, they have now become the primary means by which our very "being" is affirmed. (As evidence, we need only watch people constantly checking their smart phones, anxiously waiting to be phatically called, tweeted, or texted into existence.)

Moreover, there has been a significant change in what has been the screen's most ontologically significant capacity: to frame and display a "virtual" space-time that is present in essence, potentiality, or effect, although not in physically substantial form or actuality. Now that screens are ubiquitous, interconnected, and mobile, this capacity to display virtual spacetime has had transformative effects not only on our existence and lived-bodies but also on their very grounding. The spatiotemporal structure and phenomenological coordinates of the world in which we physically as well as temporally dwell have been reconfigured. That is, taken collectively, screens no longer only frame and display virtual spacetime. Connected together and surrounding us on all sides, their framings and displays have also opened, activated, and added another spatiotemporal dimension to the four in which all of us live. Our lived-bodies cannot physically dwell in this new spatiality without special technologies (such as sophisticated "virtual reality" equipment), and its grounding temporality – now enfolded in our own – moves at a pace far faster than we can keep up with. In sum, enabled by the collectivity of screens that surround us, it is the pervasive extrusion and permeation of this different yet coexistent "n-dimension" into our familiar dimensional world that so forcefully attracts and distracts us.[3] It is hardly surprising, then, that there has been a significant increase in the diagnosis of attention-deficit/hyperactivity disorder (ADHD) not only in young children, but also – and heretofore unusual – in adults.[4]

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A "Cartoon" Phenomenology: Experiencing Screens, or Being (Differently) in the World

To illustrate some of the ontological and epistemological implications of this expansion and transformation of our screens and our lives, I turn again to the epigraph to take literally its desire to "draw" a second screen able to display us in interaction with the screens upon which we are focused. That is, as Ernst Gombrich did at the beginning of *Art and Illusion*,[5] I will use a cartoon from *The New Yorker* – indeed, quite a number of them – to make evident how our relations with screens have radically transformed not only our modes of "knowing" but also of "being-in-the-world." Even as I must describe rather than reprint these humorous drawings and their captions (publishing budgets being what they are), taken together, they perform a phenomenological reduction – or thematization – of the "osmotic exchanges" we, in the US, have with screens today.[6] Drawing the outlines of the screen-sphere in which we now live, they make visible the variety of ways in which our comportment in the world and toward others is quite different than it was only twenty years ago. They also acknowledge a multi-generational history, in which the young among us seem completely (and unreflectively) comfortable in this new screen-sphere, whereas those of us who passed puberty before the mid-1990s are at various stages of (reflective and self-reflexive) adaptation to it.

Consider, first, the young – indeed, the very, very young. The cartoon's occasion is a pregnant woman's sonogram. She is laying on an examination table, her doctor and husband beside her. Hanging above the table is a screen, its *in utero* image of the fetus partially covered by a block of text, which offers the following options: "Share on: Facebook, Twitter, YouTube."[7] It is hardly surprising that, in another cartoon set in a hospital nursery filled with cribs, two tiny hands just visible from one of them is holding a smart phone. The "tweet" in a bubble above reads "OMG! I just got born!"[8] We could follow this constructed narrative with a scene in which parents, sitting on a sofa, watch their toddler daughter, who is standing on the cushions next to them, move her hand on the window directly behind them. The caption: "She thinks it's a touch screen."[9] And, if we jump some years ahead and pretend it is that same fetus, tweeter, and toddler all grown up, another cartoon takes us to her wedding. There, everyone at the altar except the priest is looking down at their cell phones, and the bride, suddenly distracted from hers by his question, looks up to respond: "Huh? Oh, yeah – I do."[10]

The cartoons go on to draw attention to the impact of the screen-sphere in what might be chronologically arranged as the married life of this newly united couple. One is set in a kitchen, where the wife explains to her husband, "How am I supposed to cook? The Internet's down!" while another shows the couple sitting on the living-room sofa in front of a large TV screen, the husband cares-

sing his wife's hair, as he makes a suggestion: "What do you say we turn off the television, go upstairs, and turn on our computers?"[11] Looking ahead to this imagined couple as parents, one cartoon draws the husband and a friend sitting outdoors at a patio table while, in the background, his wife takes smart phone movies of two young children playing. The husband explains to his companion, "My wife is recording everything the kids do until they leave for college. Then I'll binge-watch them grow up."[12] ("Binge-watching" as a popular practice and term emerged only recently, when on-line "streaming" of television episodes became possible – and, of course, commercially viable.) Two other cartoons provide an ending to this generational narrative. The first shows the married couple as much older. They are, again, sitting on their sofa in front of a screen, this time manipulating controllers and playing something akin to a competitive Xbox or PlayStation videogame. What we see onscreen before them is the very same couple wearing the very same clothing, and having a violently physical argument.[13] Then, to close the circle from birth to death in the screen-sphere, another cartoon takes us to a funeral home. Rhyming with the new-born tweeter in the hospital nursery, inside the open casket, we see the deceased man holding in his hands a working smart phone. As one of the people paying their respects explains to another, "It was his favorite app."[14]

The people in these observant drawings seem totally absorbed by the screen-sphere and unaware of the accommodations they have made to live within it. In this regard, one cartoon in particular stands out. It shows a busy city street filled with people walking: some on the sidewalk, others crossing the intersection. All, however, are looking down at their phones – and, as do the blind, are using canes thrust out before them to guide their movements.[15] The cartoon not only makes literal what seems our blind accommodation to the screens that absorb us into some other dimension additional to the three we physically occupy, but it also highlights this absorption's very real dangers. We seem to be almost always elsewhere at the same time as we are here where we physically are. Because of what is called our "inattention blindness" and, more recently, our "distracted walking," London has padded some of its lampposts. YouTube videos show people on their smart phones falling into shopping mall fountains or walking into walls. Moreover, television news cites statistics that indicate a large increase in "pedestrian deaths" linked to scrolling, texting, and talking.[16] Our "osmotic" absorption in screen space has not only now left the protective bounds of theater and home for the streets but it has also radically altered our comportment in physical space and compromised our physical safety.

Many of the cartoons that draw our adaptation to the screen-sphere do not picture it as quite so transparent or total. The transformation of our lifeworld is viewed with reflexive awareness by their characters. One drawing, for example, shows a couple in their kitchen, the husband trying to fix a leak from their sink, as his wife asks, "Do you really know what you're doing, or do you Google-

search know?"[17] In another, a woman on the phone tells her caller, "Actually, I'm sitting here reading a book – just to see if I can still do it."[18] And awareness of how social relations have radically changed is highlighted in a drawing, in which yet another woman announces: "A bunch of friends are coming over to stare at their phones."[19]

Computer screens are certainly an element in a great many cartoons, but they are usually figured in the background, a necessary but now taken-for-granted (and unremarkable) part of both domestic and working life. There are some exceptions, however. One, for example, shows a man at work staring at a pop-up box that has appeared on his computer screen and is blocking access to the document beneath it. The text in the box reads: "The Internet wants to destroy your productivity," and offers only a single option to make it disappear: "Always allow."[20] Most recently, and not surprisingly, there have also been several work-place cartoons that focus on screen surveillance. In one, two men sit before a bank of screen images as a guard explains to a visitor, "This is the break room where we watch reruns of classic security footage."[21] And in another, two men sit before their computers, as one tells the other, "After we read every e-mail ever written, I'm going to start on that next Dan Brown novel."[22] Finally, there is a workplace cartoon that makes patently clear the extent to which screens now shape our very being in the world and our relations with others. In it, a man sits at his desk, in front of him both an open laptop computer and a smaller tablet. He is also wearing a Google glass and talking into his smart phone. But this is not all. Both the drawing and the caption point to yet another "wearable" screen in the picture, as the man tells the person to whom he is speaking, "Hold on! I'm going to conference in my wrist."[23]

Two more cartoons invite special attention in the present context. The first is notable for being the only *New Yorker* cartoon over the last several years to directly address the "primary" screen of cinema, perhaps because it has now become predominantly absorbed by, and thus "secondary" to, the smaller, mobile, "smarter," and more multifunctional screens that accompany most of us wherever we go. The drawing is of a huge (and literally) "green screen" that dwarfs not only the two lights and camera set in front of it but also two men in the background, where one is saying to the other, "We'll add the everything in later."[24] The other cartoon is also singular, for it directs us to the systemic nature of our contemporary screen-sphere as well as positing our existential relation to it. The drawing is an oblique view of the back of a laptop computer that allows us also to see part of the keyboard, and a groping human hand reaching out and down from the screen toward it. The caption reads: "Where's that damn 'escape' key?"[25]

As this cartoon suggests, contemporary screens have created an encompassing domain from which there seems no escape – what Félix Guattari, writing of the production of subjectivity and "machinic heterogenesis," might call a new "exis-

tential territory," an embodied and affective space in which a sense of existence and subjectivity is produced through the sensory experience of being located in a particular configuration of space and time.[26] Indeed, drawn together, all the cartoons phenomenologically thematize not only our lived-body engagements with screens but also the correlative and very concrete and voluminous "existential territory" in which these engagements are circumscribed. This thematization is relational: what is newly emergent on the one side is our almost constant phenomenological absorption both in screens and by them; what is newly emergent on the other, and opened by screens, is a newly configured domain of two connected but radically different kinds of phenomenological and phenomenal space – the one three-dimensional, the other of an additional but non-Euclidean and undetermined "n-dimension," each enfolded one in the other. This is what I call our "screen-sphere."

How, then, to enlarge our frame of description of screens so as to comprehend the particular nature and form of their contemporary transformation into a radically productive collectivity that has changed the shape not only of our lives but also of our world? Certainly, the first step is for us go beyond thinking about screens as discrete devices with different forms, functions, and contents, and attempt to describe the "screenness" that grounds and connects them all.[27] As Charles Acland writes in *Cinema Journal*, although we intuitively know "the screen" as "a thing that glows and attracts attention with changing images, sounds, and information," and, in the plural, "an identifiable and meaningful array of artifacts," critical focus has been directed more toward elaboration "of the definitive distinctions between them" than toward their "*integrated qualities*."[28]

In terms of these qualities, all screens can be described categorically as a surface that realizes its "screenness" and salience only when, at minimum, a moving visual display of some sort is projected upon or from it. All screens are also constituted as a mediating boundedness that connects them to, yet separates them from, both what they display and the world from which we look at and respond to it. They thus all frame and open up to our world a virtual spacetime not accessible to us without their mediation. That is, as Acland puts it, all screens are "an in-between," or, given our recent communicative interactions with and through them, what we now commonly call an "interface."[29] Sudeep Dasgupta further characterizes all of today's screens as both "discursive filters through which our experience of everyday life and our relation to it are mediated" and "permeable surfaces through which our location in contemporary life [is] negotiated."[30] Nonetheless, Acland writes that screens remain "baffling" to us – and this is because, categorically, the screen "is not in and of itself a medium, format, or platform"; rather, it is "an in-between manifestation of all three [...] that *materializes* what we come to see and describe as the differences and connections among television, film, computers, electronic signage, and digital spaces."[31]

Today, however, the materialized connections among all these screens far outweigh their apparent differences. It is now the case that all these once heterogeneous screens are, or can be, digitally – and communicatively – integrated. Such integration *synthesizes* their heterogeneity (without necessarily homogenizing it) into what experience and observation suggest is the recent emergence of a single, dynamic, self-referential, and complex system. As electronic and coded digitization is the only "medium" here, the cinema screen is now a television screen is now a computer screen is now a tablet screen is now a smart phone screen is now a smart "eyewear" or "wristwear" screen – and vice versa. In sum, as screens have become first digitally connected and communicative (not just with us, but amongst themselves), and then functionally convergent, their comparative differences seem increasingly superficial, and their deep structural and operative connections and systemicity increasingly important.[32]

A "Machinic" Phenomenology: Screens and the Emergence of a System

Whereas the first part of this essay was anthropocentric in focus, I turn now to the screens themselves and to what might be regarded as a phenomenological, and also historical, description of their collective material and processual engagements with each other, as well as their increasing incorporation of us. As W.J.T. Mitchell and Mark Hansen suggest, "Understanding media [...] is something like understanding from the perspective of media. Media become singular forms an abstraction that denotes an attentiveness to the agency of the medium in the analysis of social change."[33] However, even as the focus is non-anthropocentric and "machinic" (a term borrowed from Guattari), it necessarily entails human observation and experience throughout – both giving rise to the very question of how to describe today's screens.[34] From a phenomenological perspective, however, it needs equal emphasis that it is the screens themselves that first solicit our attention and, thus, as we see and experience their transformation into what seems some kind of collectivity, it is they that initially provoke the question of what they are becoming, or have already become.

Particularly in urban contexts in the US and elsewhere around the world, screens have filled in (and increasingly covered over) the interior and exterior spaces of our lifeworld so as to become a simultaneously physical and virtual "surround." Moreover, as we engage them in a variety of ways, we also share in the daily experience of their increasingly dynamic connectivity. Do we really still regard them as a mere "array" of discrete artifacts, or even as a "machinic assemblage" (to use Guattari's term for a "loose" collectivity) – or do we now regard and use them as a structural and functional collectivity? Both observation and experience suggest the latter. But what kind of collectivity are they? Are the screens sufficiently integrated to form a system themselves? Or do they collec-

tively manifest the observable parts (and possible components) of some larger system – one that, having become dynamically connected, reflexively communicative, and self-organizing, may also have become increasingly complex and (pro)creative?

To respond to these questions, I think it particularly useful to draw from the collaborative work of biologist Humberto Maturana and biologist, neuroscientist, and phenomenologist, Francisco Varela on the systemic structure of living organisms as differentiated from other systemically dynamic but non-organic entities. Based on observation, they described and then laid out the criteria for, and distinction between, two kinds of dynamical and complex systems, the organization of both relevant to the question of screens. In this regard, the work of both biologists has been extremely important to the conceptual development of cybernetics, and its basic understanding of both humans and machines as information-processing systems.[35] Indeed, it has also had impact on literary studies, cultural studies, and speculative media studies, particularly in regard to "emergent systems" that may arise from the increasing complexity enabled by digitization.[36]

As N. Katherine Hayles summarizes, Maturana not only joined "second wave" cybernetics' challenge to the objectivist epistemology of its "first wave" by rejecting "the possibility of a transcendent position" of observation, but he also transformed the self-referential concept of "reflexivity" from its association with human psychological complexity to a self-organizational process constituted in "the interplay between a system and its components."[37] For Maturana and Varela, a self-organizing system is "a composite unity" – a unity because it has a "coherent organization" and a composite "because it consists of components whose relations with each other and with other systems constitute the organization that defines the system as such. Thus the components constitute the system, and the system unites the components," both "mutually defin[ing] each other in the bootstrap operation characteristic of reflexive self-constitution."[38]

Maturana and Varela's emphasis on "reflexive self-constitution" was the basis upon which they came to describe living biological systems as "autopoietic" and non-living systems as "autonomous" – also called "allopoietic." Up to a critical point, both systems were observed to have a similar organizational structure. However, whereas the goal of autonomous systems is the production of something other than, and external to, the maintenance of their own internal organization, autopoietic systems also have the capacity to self-generate or (re)produce all of their own internal components.[39] Both biologists regarded autopoiesis as an exclusive capacity of living organisms – indeed, it defined living organisms as "phyla," groups with a genetic relationship evolving in and over time from individual cells to complex biological entities. Thus, although similar to autopoietic systems in their general organization and, to a degree, their capacity for "self-maintenance," according to this distinction, autonomous systems, such as ma-

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chines, can make things of varying sorts, but they cannot make themselves. This significant distinction was (and remains) of significant interest in cybernetics, but not in terms of an argument about whether machinic systems should be thought of as "living" in any biological sense. That is, in "third wave" cybernetics, both "self organization and the increasing complexity of systemic reflexivity are seen as the engine driving systems toward emergence" in non-organic systems; in other words, non-organic systems may "evolve in unpredictable and often highly complex ways through emergent processes" that can be seen as comparable to the self-generation characteristic of biological autopoiesis.[40]

The distinction between autonomous and autopoietic systems as well as the more recent cybernetic reformulation of autopoiesis to include the "emergent" or evolutionary possibilities of complex non-organic systems is particularly relevant to providing further specificity to the historical, material, and structural organization of the "screen-sphere" – as well as to the description of our own lived relations to, with, and/or within it. Indeed, a key question arises from the distinction between these two systems as to how we might describe our own spatial (and functional) position relative to the screen-sphere – and, given our location, determine in what way we participate either within, or with, its particular form of systemic unity. However, following Maturana and Varela as well as phenomenological method, we cannot begin description by assuming that screens actually do collectively form a systemic unity. Initially, and emergent from lived experience, it is an intuition that provokes further reflection.

In this regard, evidence of the possible existence of a system as such is first manifest in the ubiquity, multiplicity, and connectivity of the screens around us. As I have earlier suggested, whatever their various physical dimensions (e.g., IMAX or Google Glass), or their ostensibly discrete functions (e.g., enabling us to browse the Internet, send a tweet, take a photograph, watch a movie, or locate oneself or others geographically for purposes of navigation or surveillance), screens have filled in the spatial gaps that characterized our earlier screen-scape to circumscribe and possibly constitute a larger and dimensionally altered domain. That is, physically, screens are a no longer separated and occasional phenomena that break up the horizontal plane of a "scape," but, in their ubiquity, they appear as continuous and constant phenomena that surround us on all sides as might the circumference of a circle or sphere. However, they do more than circle us; circumscribing us from all directions, they also open a new dimension in our world, adding volume to what once was regarded as only a planar topography. Also concretely manifest is the screens' connectivity, constituting them not as an "array" of disparate and individual devices that fill up our world, but, more complexly, as a "composite set" of heterogeneous but interrelated and "networked" parts (or components) that, through the outcomes of their "interactivity" with each other (and with us) appear to function as a systemic unity. This is the case even when, for example, competition between

cell phone companies in the US might suggest otherwise; although each company has its "preferred" devices and different geographical "coverage areas," nonetheless, the entire US is interconnected and "covered" and thus this "competition" is superficial.

The most dramatic evidence that individual screens are now a connected "unity" (either themselves a system or the components of a larger system) has been the "convergence" of what once were their discrete and divergent functions. This has been observed and phenomenologically experienced by all of us not only in daily life, but also in the academic study of media industries, where "media convergence" has become a catchphrase. However, in the context of cybernetic systems and information-processing, in both form and function, the convergence of screens emerges as *homeostasis* – per the *Oxford English Dictionary*, "the maintenance of a dynamically stable state within a system by means of internal regulatory processes that tend to counteract any disturbance of stability by external forces or influences." In this regard, it is worth noting that homeostasis was "the initiating premise" and "foundational concept" of the "first wave" of cybernetics (1945-1960). Its conservative emphasis on system self-regulation and stability was then challenged and modified (as it will be here) by the destabilizing forces of "reflexivity" or systemic self-reference in the "second wave" (1960-1980), and by the creative potential of "emergence" (and also "immersion") in the "third" (1980-).[41]

In 1974, in the journal *BioSystems*, Varela, Maturana, and Uribe offered concise criteria for assessing whether a "perceived unity" was a system and, if so, whether it was autonomous or autopoietic.[42] As Randall Whitaker notes on his very valuable and detailed website *Autopoiesis and Enaction: The Observer Web*, these criteria were "presented in the form of a 6-point 'checklist' by which one may proceed step-by-step in evaluating autopoiesis for a given unity."[43] As one proceeds, if the perceived unity fails to meet certain initial criteria, it may not be an autonomous, or self-organizing, system – and, if it fails to meet the sixth and last criterion, it cannot be autopoietic. Glossed by Whitaker (who draws from both the *BioSystems* essay and later work by Varela and his associates), the *first criterion* requires that a "perceived unity" be discrete and have both *spatial extent* and *circumscribable boundaries* that separate it from its environment. As suggested earlier, this criterion has been fulfilled by a multiplicity of screens that together have materially occupied more and more physical space and, in so doing, also inaugurated a double-sided material boundary – and relational interface – one side between the physical space circumscribed by these screens and the physical environment that lies beyond its boundaries, and the other between the physical space the screens occupy and the virtual spaces they display. The *second criterion* is that the unity has *constitutive elements*: "components" seen as a "composite set" of parts that comprise a whole. As I have also suggested, this criterion has been fulfilled both by the diversity of individual screens (of different dimensions,

dominant functions, or capacity for mobility) that form the screen-scape's boundaries, and by the connectivity that informs all their operations, thus marking them as the constitutive and composite components of a larger unity.

The *third criterion* moves toward further complexity. The perceived unity's *components must be "mechanistically" interrelated* – that is, "their properties [must] be capable of satisfying certain relations that determine in the unity the interactions and transformations of these components."[44] As Whitaker puts it, "Is the unity as it is because of its components' interrelations, and not simply because of its components' individual properties?" Individually, screens do not fulfill this criterion. However, once they became interconnected, their componential interrelations generated new "systemic" properties that transformed and determined them all as a "composite unity" – including, as I have suggested, the capacity for their functional convergence and its system-stabilizing homeostasis.

The *fourth criterion* requires that, in particular, the perceived boundary components of the composite unity must be seen to participate in the processes of the whole. That is, discernment of a "system" cannot rest solely on the boundary's material presence and circumscription of space. *Observation must also include manifest evidence of the boundary's componential status and its cooperative participation in larger processes*, for, as the *BioSystems* essay points out, without discernment of the latter, "You do not have an autopoietic unity because *you* are determining its boundaries, [and not] the unity itself."[45] Here, what is necessary is that we perceive and/or experience the screens that surround us as componentially and cooperatively participating in the larger and interrelated processes that indicate connectivity and create convergence. In sum, screens must be discernible not only as a material and spatial surround bounding us, but also as the operationally transformed (and transforming) boundary components of a composite unity. Certainly, given our direct experience and observation of their cooperative connectivity and convergence, there is no question that today's screens meet this criterion.

The *fifth criterion* involves even greater complexity. It requires that *the unity's "internal" components and/or processes must generate those components manifest as its boundaries* (here, the multiplicity and variety of screens). Moreover, it also introduces the composite unity's porosity and interrelations with its exterior environment. To quote from the *BioSystems* essay, the unity's boundary components must "be produced by the interactions of the components of the unity, either the transformation of previously-produced components, or by transformations and/or coupling of non-component elements that enter the unity through its boundaries."[46] "Osmotic exchange" indeed! This fifth criterion raises two questions: first, what might be the screen-sphere's "internal" components and interrelated processes able to generate screens as its manifest boundary components?; and, second, do these generative internal components and processes originate from within or without the unity's boundaries?

Screens, of course, were extant long before we perceived them as the possible indices of a system. Initially generated by the components and processes of scientific inquiry, technological invention, industrial production, and commercial interests, they emerged materially in the form of an individualized and chiasmatic boundary "condition," an "in-between" both separating and conjoining two different logical types of space and time through pre- and proto-cinematic and televisual mediation. Discrete and occasional in their environmental placement, they thus did not appear to be or function as boundary "components" of a larger systemic domain. Beginning in the 1920s, however, we did begin to see screens as interrelated, but this was loosely, and only in terms of their external organization through industrial and commercial coalition into movie theater "chains" and, later, into television broadcast "networks." Thus, in regard to the fifth criterion, although an initial conundrum arises insofar as some might argue that the screen-sphere's boundary components pre-existed the systemic unity that was to have produced them, I would point out that these earlier, and more externally organized and loosely located, screens were only pre-existing *boundary conditions* – collectively necessary to, but insufficient as, the cooperative and participatory *boundary components* of an extant, spatially circumscribed, and autonomous (or self-referential) system.

What was sufficient to the existence of such boundary components was the electronic digitization of screens – in screen history, an extremely recent occurrence. It was only in the mid-1990s that the exponentially increasing number of individual screens, materialized for discrete functions and in discrete locations such as the theater and home, became not only interrelated but also recursively and reflexively *interactive*. Although there is obviously a pre-history here too, in the mid-1990s, the external processes and components generated by recent scientific inquiry, technological invention, industrial processes, and commercial interests all converged in relation to the development, "improvement," diversity, and cultural proliferation of digitized screens – as well as to the infrastructural (or "internal") components and processes necessary to their existence. Material and operational connectivity of these digitized screens soon followed.

The digitization of screens thus first transformed the generally disconnected presence of a variety of discrete screens in our physical environment into the encompassing material boundary conditions of a new spatiotemporal domain, within which the externally generated components and processes of digitization (both hardware and software) became circumscribed. Once circumscribed by and connected to the screens that bounded them, however, these externally generated components and their recursive processes were themselves transformed by their very circumscription into a system-organizational infrastructure. Moreover, now "internal" components and processes, their recursive operations became also reflexive, for their self-reference now included not only their own processes and interactions but also those of the screens that constituted their material bound-

aries. It would seem that the fifth criterion of Maturana and Varela's "checklist" has also been met: the requirement that the perceived unity's *boundary components must be produced by the interactions of the internal components of the unity*. Once external components of screen digitization, these now circumscribed internal components, and their interactions within the unity, can be said to have "produced" the unity's boundary components. That is, their internal interactions transformed the manifest accretion of screens from the spatial boundary conditions *necessary for* the existence of a system into the connected and interactive boundary components *sufficient to* the existence of a system.

Moreover, this systemic connectivity and interaction transformed screens from solely exteriorized surfaces for mediated display into an "interface" that was simultaneously interrelational and interactive in two directions – one outward in relation to viewers and users and the other inward in operative and dynamic interaction not only with the screens' own components and "processors" but also, and reflexively, with the components and processes of a connected, larger, and systemically "autonomous" whole. Thus, "interactivity" can no longer be thought of only as the interrelationship of human and machine; it is a foundational structure of – and within – the system itself. It is in this regard that Varela characterized autonomous systems as *organizationally closed* insofar as their "processes are related as a network, so that they recursively depend on each other in the generation and realization of the processes themselves, and they constitute the system as a unity recognizable in the space (domain) in which the processes exist."[47]

Thus, an organizationally closed unity is recursively self-regulating and reflexively self-referential. Its recursivity is essentially conservative and "closed" in its systemic creation of *organizational self-sufficiency* or autonomy; repeating the system's core processes and maintaining systemic equilibrium with corrective feedback loops, it thus creates homeostasis.[48] Reflexivity, however, introduces *functional unpredictability* and "openness" into the system. Turned self-referentially back on themselves repeatedly, the processual "rules" and feedback loops that maintain the system's stability can also cause the system to engage in more complex, unprogrammed, and destabilizing behaviors, this increasingly common as the connectivity and power of microprocessing increases. Another recent *New Yorker* cartoon is relevant here, for it shows a well-dressed man on the street carrying a large placard that reads: "We are being CONTROLLED by the random outcomes of a complex system."[49]

Nonetheless, as do all cartoons, this one exaggerates to phenomenological purpose, pointing to the lack of control over their lives many people feel in our newly reconfigured "existential territory." That is, in terms of the possible "random outcomes" of a complex system, homeostasis "exerts an inertial pull" on any new elements introduced into it, including those "emergent" from the system's own reflexive processes. In this way, it "limits how radically [new

elements] can transform" the system.[50] Such limits, however, are provisional and in no way preclude an autonomous system's interactions with other systems and with the environment; nor do they preclude these interactions having an effect on the system's functions and organization – even to the point of its disintegration. Thus, as Whitaker puts it, organizational closure "does not make autonomous systems 'closed' in the classic cybernetic sense of 'isolated from the environment; impervious to environmental influence.'" Rather, "closure" in this context means that "their changes of state in response to changes in their medium are realized and propagated solely within the network of processes constituting them," or the system as such. Closure, here, is about systemic organization and, albeit related, not about systemic operation.

In sum, our contemporary screen-sphere's fulfillment of the preceding five criteria affirms the observed existence of an autonomous system but not yet an autopoietic one. It is fulfillment of the sixth – and final – criterion that matters most of all. It requires that *all components, interactions, and processes of the systemic unity, including its boundary components, must participate in the (re)production of these components within the unity itself.* As Whitaker emphasizes, componential (re)production accomplishes the "central theme of autopoiesis," which is the system's "organizational preservation." At this moment in time, we can see the screen-sphere moving towards (if not already) fulfilling this sixth criterion. Certainly, the convergence of screen processes and functions across all of our various screen devices is a homeostatic mode of conservative self-regulation directed toward maintaining and preserving the systemic unity of the screen-sphere as an organizationally composite and functional whole. Nonetheless, whether the screen-sphere has the systemic capacity for the (re)production of all its components (not just its boundary components) is a much more ambiguous matter.

Maturana and Varela regarded this autopoietic reproductive capacity as exclusive to living biological organisms: phyla evolving over long periods of time from simple to complex structures. However, in a broad expansion of Maturana and Varela's definition of autopoiesis, Félix Guattari has persuasively argued that if biological organisms comprise groups of phyla, so too do groups of non-biological machines that share a common origin and also evolve over long periods of time. He writes that machinic "autopoiesis deserves to be rethought in terms of evolutionary, collective entities, which maintain diverse types of alterity" as well as alter themselves as they interact with their environment over generations.[51] Moreover, when these evolutionary and collective entities are considered "in the context of the machinic assemblages they constitute with human beings, they become ipso facto autopoietic."[52] The reproducibility of technical machines depends not only on interactive "collective mechanisms" (systemic components) but also on the actions of humans. In uncanny concert with my own focus and formulation of the screen-sphere here, Guattari writes, "Thus we will view autop-

oiesis from the perspective of the ontogenesis and phylogenesis proper to a me-chanosphere superposed on the biosphere."[53]

Phenomenological Bio-Technics: Where Are We Now? Or Living "With/In" the Screen-Sphere

This view of autopoiesis again raises the major question of our own spatial and functional position in relation to the screen-sphere and the ontological questions that accompany it. W.J.T. Mitchell and Mark Hansen write of a "general medi-ality" that is "constitutive of the human as [always already] a 'biotechnical' form of life," but might not this take more specific form in the "general mediality" of the screen-sphere?[54] Thus, if the screen-sphere is now all-encompassing and be-comes our environment, and we live our world on and through the screens at its boundaries as well as in and through its internal digitized operations, have we not become, as Guattari suggests, participatory biotechnical components of – and within – it? If so, given that we humans have the capacity to (re)produce not only ourselves as viewers and users but also all of the screen-sphere's compo-nents, does this not make the screen-sphere autopoietic? Perhaps, but then again perhaps not – for there are certain kinds of interactive relations between different autonomous systems that Maturana and Varela term "structural coupling," and characterize as "a history of recurrent interactions leading to the *structural congru-ence* between two (or more) systems."[55] As I argued earlier, it is just such "cou-pling" of systems (one biological and autopoietic, one machinic and autono-mous) that historically transformed the screen-scape into the screen-sphere. Even more significant in the screen-sphere's history, however, is that its initial emergence through the coupling of these two systems and their recurrent inter-actions has indeed led to their "structural congruence" in the present moment. This structural congruence has taken the shape of a radically new, and dimen-sionally higher-order, third system. Hence, and most obvious in screen-sur-rounded places and cultures, the confusion about not only *where* we are but also *what* we are in relation to the screen-sphere.

In terms of *where* we are, structural congruence has created confusion between the screen-sphere as such and what we might have heretofore perceived as its "environment" – the space and world beyond its circumscribed boundaries. On the one hand, for those of us who live in the urban areas of high-tech culture, there is no exterior environment: the screen-sphere seems all-encompassing: it is the world, our world. On the other hand, we also still have the sense of an "out-side." This confusion arises not only from the structural congruence of two dif-ferent systems but also from the novel non-Euclidean and n-dimensional organi-zational structure of the screen-sphere itself as simultaneously both systemically "closed" and functionally "open." That is, the screens that constitute the screen-sphere's boundary components locate us both "inside" and "outside" – although

this distinction becomes no longer viable. Indeed, because they open and extrude an n-dimensional space, the screens at the boundary of the screen-sphere form the equivalent of a Möbius strip, in which their spatial "looping" of 3-D and n-D creates a continuous and one-sided surface of display. The screens bounding the screen-sphere no longer face "inward" toward us or "outward" away from us, but face us wherever we are, their chiasmatic function both connecting and separating the 3-D "here" wherever we physically are and the n-D "there" where we virtually are, but physically are not.[56]

Moreover, while most obviously a function of the screen-sphere's boundary components, the complexity – and perplexity – of our location is also a function of their connective and deep-structural complexity as a non-Euclidean, and n-dimensional sphere (also called a Riemann sphere). That is, the boundary's n-dimensional capacity and Möbius strip structure have formed the spherical circumference through what might be mathematically and geometrically mapped as a "Möbius transformation" – in this instance, by the initial "stereographic projection" or mapping of a non-Euclidean sphere onto a Euclidean circular plane.[57] Such mapping would usually define the entire sphere except for the one point of the projection itself. In the case of the screen-sphere, however, there is no "one point" of projection: all the screens at the boundary are points of projection which, then, need to be mapped. Thus, the projected screen-sphere – the map – is referred back at "every point" to the concrete yet n-dimensional boundary components, themselves projectors projecting. Here, in an extraordinary inversion, the "map" actually becomes – and already was – the "territory." The self-sufficiency of this reflexive self-mapping is analogous to an n-dimensional "hall of mirrors" become a "sphere of projections," in which one's location is multiplied, spatial orientation difficult to secure, and from which there seems no exit – and no outside.

Moreover, this spatial complexity increases. In the case of a non-Euclidean sphere of n-dimensions, in order to "automorphically" map the sphere's structure as well as topography, the stereographic projection must also be able to bi-directionally turn itself inside out as well as outside in. The only such invertible maps able to achieve such structural isomorphism are "Möbius transformations." Helpful here in visualizing this bi-directional movement, Kevin Fisher invokes the Möbius strip to point to just such a transformation in the "metal morph" T-1000's "death throes" in TERMINATOR 2: JUDGMENT DAY (James Cameron, 1991). Leaping in different forms from a vat of molten metal, the T-1000 finally transforms itself into a reflective sphere "whose surface peels away as it spills itself forward from the center."[58] Fisher then refers this dual movement to what, in n-dimensional geometry, would be considered the representation of a theoretical 4-D object called a "pseudosphere."[59] The screen-sphere, however, is not a theoretical "pseudosphere" but a very real "hypersphere" that is concretely lived as a 4-D extension of, and into, 3-D space. So as to the ques-

tion about whether we are inside or outside this n-dimensional screen-sphere, the best answer requires the "invertible" recursive and reflective description I have struggled to provide here.

Whether I have been successful or not, there are high ontological stakes attached to our location in both of the screen-sphere's (in)versions that the "Möbius transformations," as both map and concrete system, create – and that we, in this new "existential territory," live. Indeed, *where* we are is constitutive of *what* we are. That is, in the one (in)version, we are structurally "coupled" with the screen-sphere. Maturana, addressing various forms of such coupling, including that of a biological (living) system with its environment, writes: "If one of the [...] systems is an organism and the other its medium [as the screen-sphere is to us], the result is ontogenetic adaptation of the organism to its medium: the change of state of the organism corresponds to the change of state of the medium."[60] Thus, as Whitaker points out, "structural coupling" has "connotations of both coordination and co-evolution between a living system and its environs." He also suggests that "the reciprocal effect of organism and environment on each other" provides a basis for both description and interpretation of, first, "the particular state(s) in which these coupled unities/systems are observed"; second, "the course or trajectory of [these] states observed over time"; and, third, "the ultimate viability of the organism to continue operation in the given environment."

The first basis for such description and explanation returns us to the cartoons. All of the drawings I have described (and many more that I have not) make visible "the particular state(s)" in which we observe our own coupling with the encompassing electronic and digital medium (and environment) of the screen-sphere. Thus, although Gombrich offered his cartoon at the beginning of *Art and Illusion* to serve a radically different purpose than mine, the rhetorical question he posed to his readers about the historical people in that drawing is as salient to the people in the drawings here. "Is it possible," he asked, "as our cartoonist hints, that they perceived nature in a different way?"[61] And, of course, the answer is affirmative. "Nature," as we now primarily know it, is perceived as digitized, virtual, and always on screen. The cartoons also gesture toward Whitaker's second basis for description and explanation of the reciprocal relations between a living organism coupled with (in this instance) the screen-sphere as both environment and medium: "the course or trajectory of states observed over time." These drawings show a multi-generational response to this coupling – one almost completely immersed in it and the other explicitly aware of it. Thus, even as I near conclusion, I need to say "up front" that I pre-date television and, for a brief while, like many of my generation, spoke of screens only in the "cinematic" singular. (Indeed, had I more space and time, I could track a history of my many "states" of electronic and digitized "being" as they – and my lifeworld – changed in response to each new technological encounter from television onward.) Final-

ly, in Whitaker's third basis for description and explanation, the high stakes of our biological coupling with the screen-sphere as a system are made explicit. In this regard, the cartoons, and many of my references to screened news broadcasts, YouTube videos, and television advertisements, all interrogate "the ultimate viability of the organism [us] to continue operation in the given environment." Historically, we bio-technical humans have been incredibly adaptable, so the viability of our coupling with the screen-sphere is an open question – this despite the temporal fatigue or increase in distraction and hyperactivity its additional virtual dimension generates (even for the young).

However, the stakes are just as high in the other and more radical (inversion) of the screen-sphere's concrete organizational structure, functional operations, and reflexive mapping. That is, we have already become – or, more likely are in the process of becoming – living "biological components" of the screen-sphere. If this is so, in the context of the screen-sphere's systemic but specifically configured "mediality," as humans, we are no longer constituted within "general mediality" as a "biotechnical form of life," but are newly-constituted as a "technobiological" form of life. This reversal may seem merely linguistic and thus trivial but it is systemically and structurally significant. From a machinic perspective, it means that the screen-sphere is, indeed, autopoietic and able to regenerate or reproduce all of its own components, including the humans who had first coupled with it and then been absorbed by it. From a human perspective, it means we are able to be regenerated or reproduced by the machinic. Indeed, the machinic's digital implication in, and regeneration of, our fragile flesh is not hard to grasp and, in very many instances, devoutly to be wished.

I want to end with a final cartoon – one firmly, if futuristically, embedded in the screen-sphere as an emergent system that is moving toward autopoiesis not only by its increasing *incorporation* of us as systemic components but also by its increasing *extrusion* of us as through machinic production. The infrastructure is already in place and marked by the convergence of digital scanners and screens for modeling and, more recently, 3D digital printers for reproduction – this not only of prosthetic human parts but also, and more recently, of an intravenous system that can support living human tissue. Indeed, written by a respected physician who did extensive research, an in-depth article appeared in 2014 entitled "Print Thyself: How 3-D Printing is Revolutionizing Medicine."[62] What is phenomenologically and machinically telling is that a few months later, at the beginning of 2015, another *New Yorker* cartoon appeared that looked not only to the screen-sphere's future but also to our own – this with both caution and pragmatism in the face of radical, and yet inevitable, change. Again, as cartoons do, it exaggerates but the exaggeration makes us pause. Set in a coffee shop, a man and woman sit at a table, the woman speaking to her partner, who looks quietly abject. The caption: "Just curious: when, exactly, were you planning to tell me that you're the product of a 3-D printer?"[63] Systems evolve and, hopefully, so do

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humans. Whether coupled with it or components of it, we and the screen-sphere seem bound together for life.

The Concept of the Mental Screen: The Internalized Screen, the Dream Screen, and the Constructed Screen[1]

Roger Odin

The most common definitions of the screen characterize it as a more or less large surface on which information is displayed (text, still or animated images, interface controls, etc.) by projection, transparency (slide), scanning, or contact. A screen designed like this is a physical object. I would like to show, here, that to understand what happens in a number of communicational situations, it is necessary to introduce, in opposition to the physical screen, the concept of the *mental* screen.

The Internalized Screen

To begin this reflection, I would like to share a story, told to me by a friend who is a specialist in image analysis:[2] in the 1960s, my friend took his six-year-old son to see a football match at the local stadium; until then the child had only seen matches on TV, which at the time was in black and white; on entering the stadium, the boy said, "But it's all in color!" My friend clearly intended for this to be a fable about the influence of television on young minds. However, I will draw a different conclusion, a theoretical one: the child had internalized the television screen so much that he evaluated reality with regard to this mental screen. I will use the term *internalized screens* to describe screens that have a physical existence, but that we carry in our mind (but obviously the term *screen* here covers both the actual screen and the device which it is part of).

I now want to use this concept to analyze a phenomenon that has taken on a remarkable importance today: the migration of movies from the cinema screen, for which they were intended, to other screens. Obviously, the television screen was the first and favorite place for this migration; it certainly still is, but today this migration also occurs on computer screens, tablets, and mobile phones.

To account for this movement, it is important first to construct the physical communication space of cinema; it can be defined as the theater space with all it implies: an enclosed space, spectators present throughout the film, a projection

in the dark on a large screen with surround sound. Nowadays, it is this device that we immediately think of when we think of "cinema": cinema has become a mental screen, a screen that functions as a constraint when you see a movie in a physical communication space other than the cinema space.

So when I decide to watch a movie on a television screen, I am well aware that I am not in the physical cinema space, but the reference to the term "movie" invites me to expect that the communication will take place in the cinema space; hence the risk of conflict between the desired mental screen and the television space in which I am situated (the points of conflict are multiple: unprotected environment, screen size, image resolution, sound quality). Producers of TV shows devoted to movies and television manufacturers are well aware of this issue and provide *introducers* to help viewers better understand the relationship between the mental cinema screen and the physical television space. These introducers can be classified into two categories: *discursive* introducers and *pragmatic* introducers.

Discursive introducers are the opening credits and introduction of a TV program. For example, in LA DERNIÈRE SÉANCE (1982-1998), we see Eddy Mitchell enter a film theater (it is night time, it is crowded, the word "cinema" flickers on the facade of the building); he buys his ticket, chats up the usher and settles into his seat facing the screen on which the film is beginning. The idea is that viewers feel as if they were accompanying Eddy Mitchell (being "put in sync" [*mise en phases*] by the narrative structure of this opening sequence[3]) and mentally enter the cinema space.

CINÉMA DE MINUIT (1976-) plays on mythical references: stills from films depicting couples composed of an actor and an actress (stars) alternate in a cross-fading sequence. CINÉMA CINÉMAS (1982-1991) uses a symbolic dimension; the opening sequence mimics what constitutes the essence of the act of seeing a movie, entering "another" space (the diegesis of the story told):[4] each sequence is introduced by a tracking shot in black and white (from Jean-Luc Godard's movie ALPHAVILLE) where a man opens one door after another in a long corridor, discovering a different movie sequence each time; the movement of the camera and the opening of the doors become an introducer with great emotional impact.

By pragmatic introducer, I mean devices intended to modify the physical space of the viewing itself, in this case, the television space. This is the strategy of home cinema systems, which can transform your living room into a movie theater with ad hoc chairs, a window shutter system to make the room dark, a surround-sound installation (advertised as "Sound like the cinema in your living room in no time") and, of course, a very large screen with a constantly increased resolution (the debate is launched on the competition between giant TV screens and video projectors; video headsets are also in the running).

But using the notion of introducer is not enough: to understand how the migration of a movie from one screen to another operates, we must give ourselves the means to describe the *relationship* that we have with the cinema space, i.e., how we summon it mentally and also how we construct it. Until now, I have reasoned as if the cinema space was defined once and for all, but this is not actually the case. The definition I provided is indeed very widespread, but it can be adjusted depending on the generation to which the audience belongs (those who have experienced cinema before the emergence of television, those born when television was already well established, those of the computer and mobile phone generation) and also depending on the personal history of the viewer.

In my case, for example, I was accustomed from a young age, long before going to the movies, to see films on a screen the size of a packet of cigarettes (my father was an amateur filmmaker and showed me his films on an 8mm viewer, which he used for editing); as a consequence, I do not mind watching movies on my mobile phone. I suggest calling *connectors*[5] the relationships between the viewer and the cinema space.

I will use the term *exclusive rigid connector* to indicate a relationship that rejects outside of cinema any device that does not correspond to the cinema space as I have defined it. This is the position of Raymond Bellour: "The projection of a movie in a dark room, the time prescribed of a more or less collective screening, became and remains the condition for a unique experience of perception and memory defining the spectator and that any other situation more or less alters. That alone can be called 'cinema.'"[6] In this perspective, the cinema experience is linked to a specific space and cannot therefore be experienced on TV and even less so on the screen of a mobile phone.

A second kind of connector is the *inclusive rigid connector*: it is a rigid connector, because, as in the previous example, it aims at preserving the specificity of the "cinema" experience, but here the spectator makes the effort to mentally force the physical communication space to mimic the cinema space, even in conditions that might first seem incompatible with the cinema experience (watching a movie on your mobile phone while on the subway for example). In *With Eyes With Hands. The Relocation of Cinema Into iPhone*, Francesco Casetti and Sara Sampietro have clearly explained the process that is at work here, speaking of the possibility of constructing

> existential bubbles [...] that allow the subject to create an individual space even within collective environments. When using a medium in public situations, one often surrounds oneself with invisible barriers that offer refuge, even though one continues to feel open to the gazes of others. This situation is not dissimilar from that of the traditional movie theater, in which one slips from a collective encounter to individual attention to film; in the first moment

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one confronts the surrounding public; in the second moment one enters into intimacy with what is represented on the screen. The mobile cinematic spectator reactivates this situation. The institution of this "bubble" allows him to ideally replicate the spatial structure that characterizes the movie theater, even in open and practicable environments.[7]

This is inclusion: the mental cinema screen encompasses and somehow erases the physical space. One should emphasize here the role of the *desire* of cinema and the importance of *attention*, which allows one not only to abstract oneself from the physical context but also to make do with the small screen. This positioning is certainly fragile, but it works: I once missed my subway stop because I was so immersed in watching a movie.

The third connector could be called *flexible* as it aims at doing everything to preserve our cinema enjoyment, including intervening into the physical viewing space and the cinema space itself. This is adaptation, negotiation. Buying a Home Cinema system reflects this approach. Regarding mobile phones, buying a model with a screen as large as possible,[8] putting on a headset to be immersed in the movie soundtrack and eliminating as much as possible the sounds of the street, pertains to the same approach too. But other pragmatic introducers can also be used; for example, adapting your subway route to the length of the movie that you plan on watching on your mobile phone or vice versa: choosing a movie depending on your route. The definition of cinema space can also be adapted. In *Que reste-t-il du cinéma?* Jacques Aumont admits that "the mental model" of cinema can work on various devices – for example in front of the family TV and even on a computer – but he considers that "any movie presentation that leaves me free to interrupt or modulate this experience *is not* cinematographic": "this is not cinema."[9] For Aumont, cinema can be defined as "the production of a gaze held in time."[10] Although it is somewhat ambiguous – what does the sentence "any movie presentation that leaves me free to interrupt" actually mean? Are we not always free to stop watching a movie, if only by closing our eyes or looking at the person sitting next to us? It seems to me that this definition opens up the possibility of experiencing the pleasure of cinema on virtually any screen: it is, then, only a matter of will from the viewer, who will make the effort (or not) to keep his eyes still for the duration of the movie.

Finally, I will use the term *open connector* when viewers enjoy, without asking themselves too many questions, the different ways of watching a movie on the various screens available to them, with their disadvantages but also their benefits (for example, mobile phones do have a small screen, but you can watch a movie at any time, in all places, and it allows a unique tactile experience of the image[11]).

This approach can mainly be found among viewers accustomed from an early age to switching from one screen to another: for them, cinema is a mobile practice and the cinema space is associated with a nebula of various physical spaces

(TV, computer, tablet, mobile phone) in which the movie theater and its large screen is only one space among others (important, indeed, but not the preferred space).

As we can see, taking into account the mental cinema screen is essential to analyzing the communication process at work when we watch a movie in another space.

The Dream Screen

To preserve its heritage, the "family" institution has used, throughout history, various *operators*: graves, chapels, sculpture, painted portraits, medallions, fetish objects (hair strands, menus, candied almonds[12]) that are displayed under a glass dome in the living room or bedroom, or captured on sound recording, photography, film (16mm, 9.5, 8, super 8), analog then digital video. These operators can be classified into two categories: operators with the status of *objects* (they are there, present, visible to everyone) and operators whose function requires the use of a *device* that allows them to produce meaning and affects (without this device they communicate nothing). This distinction seems essential to me in order to understand what happened to home movies.

In the early years of cinema, people kept emphasizing the benefits of this technology compared to photography. In its issue dated December 30, 1885, the newspaper *La Poste* wrote: "When these devices [film cameras] will be available to the public, when everyone will be able to photograph their loved ones, not in their immobile form, but in their movements, in their actions, in their familiar gestures, with words on their lips, death will cease to be absolute."

Yet, it soon became clear that the switch from the object operator, photography, to the device operator, the home movie, was not without its problems. Despite the efforts made to improve the situation in terms of cost and ease of use of equipment, watching a home movie is still a much more complicated process than looking at photographs: first, one needs a room that can (somehow) be blacked-out; one must then get out the projector, install a screen or a white cloth that will serve the purpose (but where and how to fix it?) and set up the chairs so that the heads of the spectators do not get in the way of the projector beam. In short, one must transform one's dining room into a movie theater. Then, one must load the movie in the projector, which requires some skill and takes time. The projection finally starts, but it is not without its own risks: the film can jump, be scratched, break, or the lamp can burn out. One is also submitted to the constraint of the constant running of the film: if one starts making comments as one would usually do when looking at a photograph, if a discussion ensues, if viewers start evoking memories, one ends up missing part of the movie, which continues inexorably to run. To summarize, although it naturally appears indispensable to watching a movie, the cinema communication space

seems rather poorly suited to family communication. This is where the concept of the dreamed screen comes along: to escape these constraints, one begins to dream of another space. One must then find an operator suitable for this space.

Manufacturers of equipment for amateur filmmakers have thus offered *projectors-screens* (the screen is on the projector itself) to watch movies by simply placing the projector on a table; no need for a complicated setup or even to black-out the room, you just need to gather around the projector: a communication space totally different from the cinema space. Yet, this communication space is still far from ideal: you still have to get the projector out, load the film in the projector, while the risks and constraints due to the constant running of the film are still there. As a result, these innovations were a flop. One must also say that they were very expensive.

The move to video was a more significant progress towards the dream mental screen: firstly, as the television and the VCR were already in the living room or dining room, there was no need for specific installation and running the tape no longer posed any problems; secondly, and this is probably the major breakthrough, the addition of the pause and rewind buttons on the recorder allowed viewers to stop the movie or to watch a sequence again to comment on it and share their opinions with others. But it was still far from the flexibility of photography.

The dream screen would be an operator that one can hold in one's hand, watch as long as one likes, as many times as one likes, alone or with others, a screen that one can carry around, that one can keep with oneself at all times, an operator allowing for exchange and discussion, an operator that can be passed from hand to hand and that would even allow one, like photography, to send moving images to distant family members or friends.

Today, this operator does exist: it is the mobile phone. With the mobile phone, I carry in my pocket both a screen and a whole collection of home movies I can choose between, which I can watch alone or with others, any time, any place, that I can easily share ("pass me the movie then means pass me the mobile phone"[13]), of which I can adjust the viewing as I please (do a freeze frame, rewind, fast-forward) and that I can, with a simple click, send to anyone near or far. The dream screen has become a physical screen.

Note: If you change point of view in terms of relevance and switch from the memory function to the social function, it appears that something has disappeared in this transition to a new communication screen: the ritual value of the home movie, linked precisely to the cinema space. One must note, however, that this ritual value has probably lost much of its importance in today's families. The evolution of communication spaces indeed follows social evolution.

It is interesting to note that the story about the "grafting" of the camera onto a mobile phone, as told by Laurence Allard in *Mythologie du portable* seems to sug-

gest that this assemblage originates precisely from the desire to give substance to this dream screen.[14]

In 1977, Philippe Kahn, a computer scientist, who came to support his wife during childbirth, with, as usual, a small camera and his mobile phone, realized that he would like to send a picture of the baby to his family and friends; while his wife was in labor, Kahn began to tinker with his devices. By the time he found the solder wire, his daughter was born and he could use his makeshift device to take a picture on his mobile phone and send it by e-mail. True, false, or arranged, this anecdote is significant: described like this, the addition of the camera is undertaken in the context of private communication as an enhanced phone call and a family photo. The objective is therefore to turn the mobile phone into a memory communication device within the family space. One then naturally switches from the camera to shooting movies.

The Constructed Screen or the Screen as a Frame

In *La vie esthétique*, Laurent Jenny recalls a curious experience:

> As often, my eye was attracted by the picturesque display of one of those New York stores open day and night and run by Pakistanis, offering a motley selection of merchandise ranging from ballpoint pens to bouquets of flowers [...]. Mechanically, I took out my cell phone... and to see even more, I fell again into my habit of zooming in, focusing on the transparence effects between ice cubes and pineapple chunks. I looked at the result immediately and it filled me with astonishment. The subject had become totally unrecognizable, replaced by an undeniably Cubist composition reminding me of the wonderful years between 1908-1912 when Braque and Picasso competed at the edge of abstraction. [...] The whole image gave the impression that colors and shapes had been crushed into a frame that can barely contain them and from which they would have liked to escape.[15]

Here, the mobile phone works both as an optical filter (with the zoom, it becomes a sort of "cultural series"[16] of prisms, lenses, distorting mirrors, etc.) and as a frame that, as emphasized by Laurent Jenny, violates reality by coercing it. The physical screen is the place of a construction that transforms it into a mental screen leading the viewer to see the world through the pictorial space.

As underlined by Laurent Jenny, this phenomenon is not new. Regarding this, he quotes a passage of *In Search of Lost Time* in which Marcel Proust mentions this "framed vision";[17] in the train taking him to Balbec, Marcel Proust suddenly sees the sunrise through the window of the carriage: "In the pale square of the window, over a small black wood I saw some ragged clouds whose fleecy edges were of a fixed, dead pink, not liable to change, like the color that dyes the wing which

has grown to wear it, or the sketch upon which the artist's fancy has washed it."[18] As a bend caused him to lose this magical vision, Marcel spends his time running from one window to another "to reassemble, to collect on a single canvas the intermittent, antipodean fragments of my fine, scarlet, ever-changing morning, and to obtain a comprehensive view of it and a continuous picture."[19] "Caught in the train of existence," comments Laurent Jenny, "he applies to it the windows of art," then adding: "There is nothing here of course that can surprise us, we who look at the world not merely through windows, but through the digital screens of our cameras and mobile phones."[20]

Looking at reality through a frame has now become something natural. It is as if having a screen-frame constantly at our disposal (i.e., the specific affordance of the mobile phone, the phablets, and small cameras) reactivating a thousand-year-old process, which, according to evolutionary anthropology, has somewhat forged our way of seeing: the desire of our hunter-gatherer ancestors to find a vantage point to see without being seen by protecting themselves under a shelter and the frame constituted by the branches of trees. The screen-frame makes us "feel protected while we engage in a quiet visual exploration," notes cognitivist Laurent Jullier.[21] It is the consequences of this increasingly significant presence of the screen-frame in the space of everyday life that interest me here.

A first observation is that the fact of framing helps us to see better and make the world be seen. I have often been fascinated by how children use a mobile phone, which was given to them: visiting a museum for example, they turn and turn around the works of art to select those they will put in their personal archive; walking in nature, they look for insects, flowers, or stones to photograph, with an attention to the things of the world that they had never shown much interest in before. Similar behavior can be observed in some tourists. All the theorists of the frame emphasize its power of concentration (preventing the gaze from wandering), insulation and ostension (it has a deictic value).[22]

Here, the mobile phone is part of the "cultural series"[23] of microscopes, telescopes, etc. However, it would be wrong to stop there. Framing is not just simple observation: the screen is a mental operator, a filter that produces distance and changes the perception of reality as it introduces points of reference (the edges of the frame) that lead us to build relationships that do not exist in reality.

Very often, this process is coupled with a will to communicate. Louis Marin has shown how the frame in painting is a device aimed at predicting the viewer's gaze.[24] All photographers and filmmakers know this: framing means choosing a "view" on the world and transmitting it to the viewer.[25] What is new today is that everyone is aware of this mental process. One sees, for example, how participants in a demonstration are anxious to frame their images to show what the media often does not show (i.e., police brutality), to locate the place for authentication purposes (by filming street names), to cause a reaction (framing close-ups with highly emotional images, i.e., the swollen face of a beaten protester). With

these techniques of construction, the screen does not work in the present, but is projected mentally into the future.

Finally, the desire to see something "framed" reflects a will to transform the world into an aesthetic space: "What was a refined aesthetic practice has become a kind of democratic habitus," notes a somewhat disillusioned Laurent Jenny.[26] Let us observe ourselves looking at the world through the screen of our mobile phone: we move this frame until the game of relationships that is created satisfies us. In so doing, we eject from our field of vision everything that is outside the frame. The frame cuts and eliminates, reflecting our will to select in the world what we want to keep, what seems interesting or "beautiful" to us. The frame is a beauty operator ("Look how beautiful it is"). But there is more, as Karl Sierek pointed out. This operator does not just fix the presence in the moment, it aims at a building to capture "for the future a state that will be experienced as beautiful."[27] The screen tells us: "Tomorrow, it will have been beautiful." The frame creates a mental screen that fixes the world in beauty for eternity. One can see this movement as a way to extract or at least to protect oneself from the world and its hazards. The frame effect can then turn into a screen effect: framing to make something seen, but also screening oneself from the world.

One also tends to turn the frame-screen towards oneself (more and more often) to make a self-portrait (when this self-portrait is designed to be put online, it is called *selfie*). The process shows both a will for self-distancing (the frame-screen is held at arm's length), but also a will for self-affirmation by including oneself in a chosen space, with or without chosen partners. In a way, it is the opposite of taking family photographs (photo or home movie) that was imposed upon us: it was generally an initiative of the father; I have shown in other work how traumatic this could be, especially for children.[28] Framing oneself is a process of mental construction aiming at reappropriating one's image through the voluntary gesture of photographing oneself. Morphing is part of this phenomenon: you laugh, alone or collectively, at the distortions that you impose on your face, but it is you who operates software. This is another function of the frame-screen: the screen is a mental go-between the self, self-representation, and the world. In an interview with *Le Monde*, Laurent Jenny rightly notes: "Have you ever noticed that people use their mobile phones not to photograph and record, but to look immediately at what they've just taken? They somehow want to have a 'framed' vision, to see themselves or what they observe set in a frame […]."[29] As clearly demonstrated by Laurence Allard[30] (drawing on the reflections of Michel Foucault), this process belongs to the "technologies of the self"; that is to say, the "procedures […] that are proposed or prescribed to individuals in order to determine, maintain or transform their identity."[31] Through the frame, the screen functions as an operator in the construction of the self.

Conclusion

This essay has no other ambition than to offer more tools for the analysis of communication in the spaces centered on the screen.[32] The notion of a mental screen has been developed in three parts. The notion of internalized screens corresponds to physical screens (cinema, television) that have become mental spaces. Dream screens are mental screens waiting for physical manifestation; one must note that this type of screen is the source of certain inventions: cinema and television have been dream screens before being invented. If these two types of screens have the common characteristic of being in us, the status of the frame-screen is a little different: it is a physical screen that a construction process transforms into a mental screen (a screen functioning as an operator generating various mental processes).

In the three examples studied here, the screens do not have the same function. In the case of a film seen outside the cinema space, the mental cinema screen appears as a constraint that may cause a failure of communication. In the case of the home movie, on the contrary, the mental screen is what allows us to escape the constraints that impede communication, it is a liberator. Finally, the constructed screen, i.e., the frame-screen, regulates our relationship with the world, with others and with ourselves. One final note: this trivialization of the frame-screen should not hide the opposite trend, even if it is still marginal: its disappearance with the emergence of virtual reality.[33]

Translated by Nick Cowling and Marie-Noëlle Dumaz

Between Fascination and Denial: The Power of the Screen

Dominique Chateau

The former opening credits of the French TV show LES ENFANTS DE LA TÉLÉ[1] showed babies gathered together in front of a TV set, one of them kissing the screen. Other TV credits are in a similar vein, notably those of the series DREAM ON, whose successive shots show the evolution of a child, from baby to adult, in front of a black-and-white television set; or those of HOMELAND where little Carrie is shown from behind sitting watching TV, particularly attentive to the political images displayed on the screen. This obviously suggests considering both the sociological and cultural issue of generations discovering life through television on a daily basis. DREAM ON follows this pattern in its very structure, since, throughout the series, old black-and-white clips expressing Martin Tupper's (played by Brian Benben) childhood memories, feelings, or thoughts are constantly interspersed in the plot.

But one can also see other things in these credits, whether it is the baby kissing the screen or the child growing up in front of it. One can see the fascination for this object or, rather, part of this object, that has become a ubiquitous part of our lives, whether today or in the past: the screen, whether it regards the cinema, television, computer, tablet, laptop, etc. I will therefore try to address here the psychological and cultural phenomenon of this fascination for the screen; I will analyze it from the point of view of the iconic effect it produces – and of the denial of representation that follows – in relation to its ambivalent physicality as a medium aimed at transmitting energy, that is, light.

What the Screen Hides and What It Shows

One often mentions the opposition between the screen that *shows* and the screen that *hides*. In fact, starting from one approach, one very quickly ends up considering the other, and vice versa. The opposition between what is shown and what is hidden is also a duality. The screen that hides can be something material, an obstacle that hides what could otherwise be seen, but it can also provide protection, the way, for example, a hedge surrounds a house. The hedge stops the gaze in two ways, first, by obstructing the view of the private space and, second, by

being a potential subject in itself, whether well or badly trimmed. One can stop the gaze by blocking or capturing it. One can block it, so it fixes on what blocks it.

There is a kind of barrier, both enclosure and tribune, made of stone or wood, which, in some churches, separates the chancel from the nave; it is called the *jube*, in reference to the Latin phrase "*jube, domine, benedicere*" (O Lord, bless me indeed). In English, it is also called the *choir screen*. Jacqueline E. Jung remarks that "scholars and churchgoers alike have long understood the function of choir screens to separate and exclude," while current research in art history insists on the idea that they represent "signs of either social or aesthetic disunity":[2] on one side, an impassable frontier between the clerics and the faithful; and, on the other, an obstacle to the spectacle of the wide open perspective in Gothic churches. Jung highlights another aspect of the issue that nuances these theories. It seems particularly pertinent to call the *jube* a "screen" as it serves both as a pulpit from which the clerics, although hidden away in their own world, address the faithful, and as a window, since its surface displays representations aimed at churchgoers:

> The fact remains that just as the screens were, physically, the place from which clerics spoke to laypeople, so they were, visually, the main architectural feature by means of which clerics spoke to laypeople. And just as those clerics made an effort, when speaking from atop the screens, to talk in a language that their listeners would understand, so on the screens' surfaces, they strove to communicate with viewers in a visual language that would be immediate, comprehensible, and relevant to them.[3]

One can note here that, due to Christian conception, the image, instead of being banned as in other monotheistic faiths, was used as a means of communication that was easily understandable by the people. Due to its main characteristic, the choir screen served as "the Bible of the illiterate." That is, as an iconic sign, it has the capacity to directly transmit what it represents and signifies through representation. But the immediacy of the sign does not exclude the fact that a complex mediation involving various apparatuses or devices is at work here.

The image itself is a mediation of the immediate. There is no systematic rule, which would require that the more the constitution of the image is artificial, the more it moves away from immediacy. It is rather the opposite: simplified representations are understood faster than others, as shown by the famous experiment carried out by Ryan and Schwarz (1956): Mickey Mouse's chubby hand, although it only has four fingers and looks like a glove, is identified as a hand faster than a painting of a hand, which is also identified faster than its photograph.[4]

To return to the shown-hidden phenomenon revealed by the analysis of the choir screen, the way of hiding in order to show or to show in order to hide, one

can also recall the invisibility cloak in *Harry Potter*, a cloak that makes the one who wears it invisible, not to focus on the piece of clothing itself in the context of witchcraft, but on scientific research, which is still studying invisibility that can be obtained through using a complex set of lenses or, better yet, the properties of a material called negative-index metamaterial. Since we usually see someone because "the material of what that person is made off reflects incidental light into [our] eyes" and that it "blocks this light from what is placed behind," metamaterial could be used to force the blocked light rays to bypass the obstacle and take the place of the image seen.[5] The invisibility cloak is a paradoxical kind of screen since, reversing the usual relationship of the screen to light; it takes the background to the foreground. By comparison, the "traditional" screen belongs to ordinary perception: a canvas opaque enough to prevent light coming through from behind from blurring the image or a wall on which the screen is fixed. It is obviously this blockage that determines the correct visibility of the image on the screen.

But it is also true that the increase in the variety of screens has led to new configurations, nevertheless prefigured in the rear-projection technique – *écran de transparence* in French – which provides a background to actors through the projection onto a translucent screen. The type of insulation from the context required by the screen, instead of being obtained by removing any effects from ambient light, as is the case with the blackout of the movie theater, can be obtained by overcoming the effect of light by using appropriate technology that manipulates the projected light. For example, backlight-screen technology, in which the screen is lit from behind and which dramatically improves image quality, allows both to enlarge video screens and, thanks to Light-Emitting Diodes (LEDs), to reduce them. In the same vein, one can also mention the transparent smart window created by Samsung and which offers a touch-controlled interface between transparent glass and the light of a lit room, offering a striking similarity with the technology shown in the film Minority Report (Steven Spielberg, 2002). It is remarkable to see how fiction, especially science fiction, can anticipate technology and science. This suggests that the pre-scientific or metaphorical approach to problems, notably in the absence of adequate technical knowledge, deserves attention, provided, however, that one takes the precautions required by a proper scientific approach.

The Screen and the Metaphor

The ambiguity of the visible, which exposes a part of the world to us while possibly hiding another, authorizes all kinds of shifts in meaning towards the metaphorical. Behind the hedge, there is an entire unknown world and this gives free rein to imagination, which overcomes the visible memorized to invent possible worlds. But, in an even more abstract – though more prosaic – way, one

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says, for example, that a political speech is a smokescreen that hides the truth. Philosophy even goes as far as making the hypothesis that the whole of reality is a screen that hides "true" reality.

"The picture is literally gray but only metaphorically sad": this distinction made by Nelson Goodman[6] has not always received the attention it deserves. Whatever the subject of reflection, one would actually have everything to gain in becoming aware of the difference between the literal level of the properties that actually belong to it and the metaphorical level of those attributed to it by analogy with another domain. The gray color is a property of the pictorial matter, but sorrow is what we feel in front of the image. In this essay, I will start from the literal characteristics of the screen, its real properties in both their permanence and their variations, but I will also try to show that, regarding this subject, a proper use of metaphor – or rather, of the metaphorical, as it is more the cognitive[7] mechanism than the rhetorical figure that interests me here – could actually provide pertinent results.

Metaphor is obviously part of the poet's toolkit. A song called *Cinéma* by the French singer Claude Nougaro begins as follows: "On the black screen of my sleepless nights / I make my own cinema [...]." And André Pieyre de Mandiargues, at the beginning of the introduction to *Musée noir*, wrote: "The overview provided by the senses in human consciousness is a flimsy screen; constantly pierced by holes, shaken by turbulences, it only blinds those who are precisely trying not to see anything beyond its mediocre readymade."[8] However, poetry is obviously not the only discipline to use metaphor. On the contrary, as Goodman points out: "Metaphor permeates all discourses, ordinary and special, and we would have a hard time finding a purely literal paragraph anywhere." And, reflecting on his own words, he added: "In that last prosaic enough sentence, I count five sure or possible – even if tired – metaphors."[9]

Beyond this insightful observation, one must recognize that the metaphor, although it sometimes corrupts the discourse, notably when it claims to act as an argument, can be useful as a premise or link in the reasoning. In the same vein as LES ENFANTS DE LA TÉLÉ, I have actually seen babies lick the screen of a CRT television. Try it; you will see that they have a very unique taste! However, engaging in a metaphorical discourse on the taste of the screen reminds us of the pre-scientific discussions on the taste of electricity, which Gaston Bachelard considered as an obstacle to scientific progress. He noted in this regard: "There would be no great harm if this metaphor were not *interiorized* [...]. A mind that continues to think this quality in these terms will gradually become impervious to the experimental evidence belying it."[10] Apart from its educational use, metaphor can participate in the knowledge process when, instead of replacing reasoning, it is evaluated in the light of rational criteria.

Let us use the metaphor of the screen-retina as an example of the necessity for this evaluation. Beyond the surfaces offered by different apparatuses, considering

the vision device reduced to the eye, one can indeed admit the analogy of the retina with the screen. Besides, as one could say, the image of what is seen is formed as a reversed image on the back of the eye. But this very fact clearly shows that the retina does not exist on its own and that, in addition to its purely optical relationship with reality, its relationship with the brain must also be considered: it is indeed the brain that puts the image back on its feet, so to speak. And this is not the only function of the retina, if one considers the photoreceptors that line it, transforming, decomposing and somehow pixelating the captured image and transmitting this decomposition through nerve messages. The retina is then an extension of the brain, the instrument with which it captures and transforms visual information; and it is the brain that, from the decomposition of the visible into dots (like pictorial Pointillism or pixelation), recomposes the whole image: so, by this reasoning alone, should we not say that the screen is in the brain?

Another metaphorical transfer is then possible. It is found in all kinds of texts from cognitive, philosophical, and cinematic research. For example, during a discussion on the "Cartesian Theater" model of mind, often criticized because it "requires an observer who is all-seeing and all-knowing regarding the perfectly determinate projections on the screen of the inner theater. What is projected there can never be fuzzy or indeterminate, and though the observer may succumb to rapid loss of memory, he can never fail to notice anything on the screen before him at the instant of the presence."[11] Among the metaphorical residues of such proposals, one can find Goodman's remarks and, similarly, and even more so, when analogy is floating in the uncertain domain of the encounter between philosophy and film studies, as in *Screen Consciousness. Cinema, Mind and World* in which the precision of the title cannot compensate the fuzzy questioning, as evidenced by one of the yet most precise questions in this collection of texts: "Does the screen of consciousness on which the world appears have specific form and place or is it beyond the fabric of the brain and out there at the very limits of the cosmos?"[12] Various other authors have used the metaphor of the screen, such as Gilles Deleuze and Félix Guattari regarding the face – "The face constructs the wall that the signifier needs in order to bounce off of; it constitutes the wall of the signifier, the frame or screen"[13] – or Jacques Lacan regarding the mask – "Only the subject – the human subject, the subject of the desire that is the essence of man – is not, unlike the animal, entirely caught up in this imaginary capture. He maps himself in it. How? In so far as he isolates the function of the screen and plays with it. Man, in effect, knows how to play with the mask as that beyond which there is the gaze. The screen is here the locus of mediation."[14]

We know what role he played in the development of screen theory, which is more a theory of what is hidden behind the screen than a theory of the screen itself. As Laura Mulvey wrote in her seminal article:

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> What is seen of the screen is so manifestly shown. But the mass of mainstream film, and the conventions within which it has consciously evolved, portray a hermetically sealed world which unwinds magically, indifferent to the presence of the audience, producing for them a sense of separation and playing on their voyeuristic phantasy.[15]

Here, I am less interested in what is seen *off* the screen than in what is seen *on* the screen. From this perspective, the pre-eminence of what is hidden over what is shown, so dear to psychoanalytic theory and theology, finds a new balance. The authors who focus on what is hidden, with the intention of bringing it out of hiding or simply to denounce it, have a certain tendency to hierarchy, as in the example offered by Maurice Merleau-Ponty, not only in *The Phenomenology of Perception*, extensively quoted by Lacan but also in *The Visible and the Invisible*: "language is a power for error, since it cuts the continuous tissue that joins us vitally to the things and to the past and is installed between ourselves and that tissue like a screen."[16] However, contrary to the antinomy that the language barrier, or any other obstacle, forms with life (or, equally, with the mind, the truth, etc.), the phenomenologist, turning away from the single theme of the screen that hides, also borrows that of the screen that shows in a passage concerning the kinds of beings that Marcel Proust drew attention to, especially music ("the little phrase" of the Vinteuil Sonata), but also "the notions of light, of sound, of relief, of physical voluptuousness, which are the rich possessions with which our inward domain is diversified and adorned":[17]

> [T]hese truths are not only hidden like a physical reality which we have not been able to discover, invisible in fact but which we will one day be able to see facing us, which others, better situated, could already see, provided that the screen that masks it is lifted. Here, on the contrary, there is no vision without the screen: the ideas we are speaking of would not be better known to us if we had no body and no sensibility; it is then that they would be inaccessible to us. The "little phrase," the notion of the light, are not exhausted by their manifestations, any more than is an "idea of the intelligence"; they could not be given to us *as ideas* except in a carnal experience. It is not only that we would find in that carnal experience the *occasion* to think them; it is that they owe their authority, their fascinating, indestructible power, precisely to the fact that they are in transparency behind the sensible, or in its heart.[18]

Here, one cannot fail to underline the presence of light among the invisible elements whose mode of existence requires the screen of the visible, the flesh of the visible. The screen gives them flesh in a conditioning whose importance is well known, notably the rectangular frame that usually cuts the screen in the world and gives it its axes, but one must also stress that this depends on the

paradoxical element that is light, due to, as I said in my introduction, its ambivalent physicality as a material means of transmitting energy. One cannot grasp light with both hands as one can do with screens; one cannot touch it as one now does with touch screens. But it is light that allows us to see what there is to see or touch. Light is a quasi-material immaterial in its own mode of existence, but absolutely critical to matter and to any sensory relationship to matter – it is something that painters can obviously feel, especially when, like Pierre Soulages, they profess to systematically use the power of luminous energy reflecting on black surfaces: "[...] the light as I use it is a material. So there are very significant consequences, especially in relation to space. In painting, colors do not exist as such, there are only relationships."[19]

The Iconic Effect

With respect to the controlled application of the metaphorical process to the question of the screen, Charles S. Peirce gave us an additional argument by showing us the close link between metaphor and image, knowing that the screen, whether it receives light from the outside or the inside, is a powerful tool for the presentation of images. This argument is particularly clearly put forward when defining the term *icon*:

> A sign may be *iconic*, that is, may represent its object mainly by its similarity, no matter what its mode of being. [...] Any material image, as a painting, is largely conventional in its mode of representation; but in itself, without legend or label it may be called a *hypoicon*. [...]
>   Hypoicons may be roughly divided into the mode of Firstness of which they partake. Those which partake of simple qualities, of First Firstness, are *images*; those which represent the relations, mainly dyadic, or so regarded, of the parts of one thing by analogous relations in their own arts, are *diagrams*; those which represent the representative character of a representamen by representing a parallelism in something else, are *metaphors*.[20]

The image and the metaphor (in the same way as the diagram) are *hypoicons*, which means that, viewed from the single point of view of what they evoke in the mind, they produce the same effect in the receiver, i.e., the iconic effect. The icon, as defined by Peirce, is a kind of sign, if you will, but not a kind of *thing*. Specifically, it is a relationship category between the sign and what it targets. It is better to talk about the iconic character of the image to describe this sort of abstraction of representation – no matter whether it is drawn with a felt pen, painted, or photographed – which naturally and spontaneously leads us to see the represented as such, thus allowing us to be moved at the sight of the representation of a cute dog or to be horrified by a report about war. Peirce said:

> Icons are so completely substituted for their objects as hardly to be distinguished from them. [...] So in contemplating a painting, there is a moment when we lose the consciousness that it is not the thing, the distinction of the real and the copy disappears, and it is for the moment a pure dream – not a particular existence and yet not general. At that moment we are contemplating an *icon*.[21]

Indeed, Pierce rightly and emphatically refers to a moment: "there is a moment," "for the moment," "at that moment..." It is precisely *for the moment* that we consider as real what is represented. The feeling of the icon is a moment in the relationship to the image or an instant, the moment of a passing dream, like a breath soon extinguished; if it is prolonged, it is because we revel in it, we entirely surrender to the hypnosis of aesthetic contemplation or no less fully to some kind of meditation. In any case, it is by no means a property by essence. As such, the image is not, objectively, the oblivion of representation, since it never exists without an act of representation, it is never minimal, and it both signals and establishes representation. The image is the attestation and the product of an act of representation, which it bears within itself; it carries its own cause as a trace.

In the moment of the icon, we experience a perceptual disorder. The image wants us to be bipolar. Regarding cinema, though this is applicable to any image, Edgar Morin talked about "double consciousness":[22] I know it is only an image, but I am encountering reality and I have the same feelings towards it as I have in life. Some considered this as deception, at a time when the morals affected the notion of ideology: the illusion of reality, favored by perspective, was said to be *bourgeois.* In fact, this double dealing commonly serves us in our many ordinary encounters with semiotics – too ordinary to be dishonest! In a street, I look for a house with its photograph as the only reference. I do not care about the quality of the photograph; I do not care about the theory of photography. Fortunately, in these sorts of cases, one does not feel guilty about giving in to illusion. Fortunately, no ideological superego inhibits us. When I look at the photograph of my deceased parents, I actually look at my parents *through* the medium of photography! I would rather feel guilty to switch from the memory I have of them to a judgment on the photo itself. The ordinary attitude and the aesthetic attitude towards photography are not the prerogative of two categories of viewers (as claimed by a certain sociological Manichaeism), but two alternative practical modes between which we continually oscillate. As Andy Warhol said: "An artist can slice a salami, too!"[23]

Far from blaming anyone about the icon effect, what one should emphasize is movement; the hyperbole that transforms it into the belief that the image would be essentially transparent. And, as a consequence, that it is a kind of zero representation, redundant and indifferent. The experience of the icon then becomes

the denial of representation. The experience is overwhelmed by ideology. The best example of this ideological extrapolation of the icon effect is the theory on the religious icon. Of course, the believer is invited to focus on the presence of Christ or the saints represented; and, of course, the icon effect makes this attitude possible. But this does not prevent the fact that the effect is based on a very specific representation, which is carefully studied by specialists of Eastern Christian art; in addition to the historical conditions of the emergence and development of the religious icon, they make us understand the strict rules of its production, without which there would be no chance for the icon effect to occur. It obviously requires a precise, determined, and targeted representation. In the manner of *trompe-l'œil* and hyperrealism that, playing on another level, also require extreme care in the handling of the artists' tools. In other words, the success of the icon effect does not abolish the work on the representation; it only abolishes the consciousness of it in the moment, more or less long, in which the effect operates; the success of this effect also implies that the apprehended object proceeds from representation.

Extending the icon effect beyond the moment, making it the essence of the image, is to transform experience into ideology, the ideology that is the denial of representation. This weapon is even more effective as it uses the very properties of the image, which, as we have just seen, can somehow be cut in two, whether by forgetting the icon effect in favor of convention, or by forgetting convention in favor of illusion. Reflecting on the denial of representation inevitably means drawing the line between the properties and the ideology of the image. It also implies discerning the literal from the metaphorical, as explained by Goodman: making the icon effect the essence of the image is like assigning to the image the feeling that it makes us experience; it is likely that this feeling, in most cases, has to do with the representation shown in this image; but it is equally clear that, due to our personal state of mind, we can feel sad in front of an image that leaves others indifferent.

Semiotics, Ideology, and Aesthetics

The denial of representation works in close collusion with the philosophical thesis that claims that the whole of reality is a screen that hides "true" reality. Obviously, one cannot help think here of Plato's opposition between the sensory and the intelligible and his "world of ideas," and the use of the allegory of the Cave, which is no less a cliché of film studies than the duality of the screen that shows or hides. However, approached with caution, this allegory indeed provides an interesting insight on this duality. Its backdrop is actually the opposition between the visible and the intelligible that Plato developed in Book VII of *The Republic*, but the allegory describes something more precise: not only the conversion of the elected (philosophers) to truth but also the political moment of their

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return. Now, through the metaphorical displacement of the allegory, the sensory hiding the intelligible, or the visible hiding the invisible, is represented as a screen in the darkness of a cave where, since childhood, prisoners are chained so that they can neither move nor turn their heads. Their field of vision is thus limited to the shadows of artifacts cast on the bottom of the cave and which, manipulated by marionette players, pass in front of a fire burning above: "Above and behind them a fire is blazing at a distance, and between the fire and the prisoners there is a raised way; and you will see, if you look, a low wall built along the way, like the screen which marionette players have in front of them, over which they show the puppets."[24]

This is a screen that hides the truth, not because the truth is behind it, transcending exactly what is shown, but because it guides the mind in the wrong direction: towards the projection rather than its source. Light, which is the source of the projection, is also, in the Platonic allegory, a source of knowledge, supreme knowledge, when considered in itself; we must turn our back to the screen to access this source. Now, if one considers the screen itself, Plato's screen is also a screen that shows, so that the iconic effect works perfectly. Supposedly, the prisoners are fascinated by what happens on the screen. To liberate them, one must tear them away from this fascination by breaking the shackles that keep them in place. They are not "consenting adults" (as one says), who, informed about the immense advantage that represents access to knowledge, through access to its source, i.e., light, decide to break from their current situation, but spectators staring at the screen, mesmerized by what they see, and apparently content with this situation.

The question of contentment indeed arises. Regarding the screen, what interests me here is less the ideology that the projected figures represent – and which, like language, according to Merleau-Ponty, operate as forms of externality that screen the truth, that of life or mind – than the very ideology of the relationship to the screen in general. One can always adopt, regarding the screen, a moralistic position that denounces the fascination it creates, the way Duhamel denounced its mental consequences: "I can no longer think what I wish to think. The moving images have ousted my thoughts," a concept which, beyond resentment, Walter Benjamin extended in his theory of the traumatic image.[25] In terms of fascination, due to the insistent light it reflects or carries, the screen would be the permanent basis on which occur the spectacle, the spectacular effect, and special effects, all these increasingly superficial levels of audiovisual representation. However, theory is not ideology. Following Benjamin's example, one must be able to transform denigration into a theoretical idea.

At this stage, it seems necessary to evaluate the fascination for the screen from three perspectives: semiotics, ideology, and aesthetics. The semiotic approach indeed offers us the iconic effect and considers it as the moment of the experience of the screen; I look at an image for what it represents, oblivious for a

moment of its mode of representation. We thus pass from one screen to another. The same film can go from one screen to the other, from TV to mobile phone. It is possible, as we do it, as Aristotle would say. But it does not mean that the experience is the same, as Raymond Bellour pointed out:

> The living projection of a film in a cinema, in the dark, for the prescribed time of a more or less collective session, becomes and remains the condition for a unique experience of perception and memory, defining its spectator, and that any other situation of vision more or less alters. And only this experience is worth being called "cinema."[26]

However, certain conditions of the experience are identical or comparable. Indeed, the perceptive relationship to the screen is not the same if it is the big screen of Kinopanorama or the small rectangle of the mobile phone, notably because the gaze, which is a mixture of ambient and focal vision, is not called for in the same way: a small screen promotes focus, whereas a large screen appeals to a more ambient vision (the viewer who is too close to the screen tends to look as if he is watching a tennis match, sitting at center of the court, following with his eyes and head the ball as it goes back and forth). However, there are similarities between the two screen sizes: their attractiveness is comparable (but not identical, due the psychological and physiological reasons I just mentioned) because of the association of the image to light, whatever its source.

To further analyze the ideology of the screen, it is more interesting to consider the manner in which the iconic effect is essentialized to produce the denial of representation that one encounters both in everyday life, when one takes at face value what is represented on an image, for example as physical evidence of a crime, and in various more or less phenomenological theories that use the effect of presence in its purity, forgetting the artifice that established it. The denial of representation extends the iconic effect even more when it is increased by the effect of the screen; in daily life, the area where it is most effective is the media, given the addiction produced by the TV shows that we watch continuously. But between the iconic effect and the denial of representation, between the semiotic fact and ideology, one must also make room for another kind of continuation and extension of the iconic effect that characterizes the aesthetic attitude. One of the most compelling theorists on this subject, Archibald Alison, considered that the aesthetic attitude means the exclusive focus of the subject's mind on an object, but also characterizes the captivation of the subject's mind by this object.[27] Through its light and what it illuminates, the screen promotes or reinforces the paradox of the aesthetic attitude, between voluntary concentration and quasi-hypnotic abandonment.

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Hypnosis

I am in a restaurant with friends, sitting in front of a television screen; although I am trying to focus on the conversation, from time to time, my gaze returns to the screen; although I am trying to detach myself from it, something irresistibly draws me to it. This reminds us of insects attracted to a light source that will kill them. Apart from this fatal ending, the comparison[28] is even more pertinent as, in the fascination for the screen, it is actually the light that is the cause, whether it is a light beam of "old school" projection, from the back or rear projection on multiple state-of-the-art screens. According to Plato, one must be helped by a third party (but who will snatch the first prisoner from his chains? Who can escape this common condition of mankind?) to turn towards light, but it is also light, when projected on the screen, that attracts and fascinates – no need for chains when the mind, captured by the screen, forces the body to stay where it is, the gaze fixed on this bright surface where forms appear and come alive!

The screen is hypnotic. Light somehow replaces the stare of the hypnotist. Two characteristics of the screen remind us of fascination as psychoanalysis envisaged it (including Freud and Lacan): first, it depends upon a restriction of the object to one of its aspects and, correlatively, requires a strong focus of the gaze; second, it captures not only the gaze, but the mind in a way that reminds us of hypnosis. However, there is a major difference between the hypnotist and the screen. Therapeutic hypnosis or hypnosis as entertainment is a relationship of consciousness with consciousness. Freud compared it to love: "subjection on the part of one person towards another has only one parallel, though a complete one – namely in certain love-relationships where there is extreme devotion."[29] The fascination of the lover for his/her beloved actually resembles the hypnotic relationship, as the first abandons all or part of his/her self to the other. It is also similar to the Hegelian master-slave dialectic, particularly the idea that the dominated and the dominant have a reciprocal power relationship in the sense that the dominant needs the dominated as much as the dominated needs him/her.[30] If the hypnotized does not abandon him/herself, the hypnotist fails; if the loved one does not give him/herself up, it is the lover who fails.

The difference between those situations and the screen is that, in the screen's case, abandonment is all relative. The relationship is necessarily different since it is not two human beings, provided with subjectivity, that are involved; it is not an interrelation of two gazes, man's vanguard of consciousness. Similarly, the screen indeed speaks, but through characters or some more or less impersonal entity. And the receiver of the screen is a human being, but the thing that, through one of its parts, the bright screen, catches his eye, is without consciousness; it is not even unconscious, as in a temporary halt of consciousness, but literally devoid of any consciousness. Of course, human beings appear on its surface, but although animated, they are only a simulacrum. Hence the hypnotic

game of the iconic effect. Or the double consciousness game that Christian Metz, drawing on Freud's metapsychology, called paradoxical hallucination.[31] I hallucinate as real something that is real and yet is not. I do this knowingly, with a certain distance, without being numbed by hypnosis or giving myself entirely to love. In film, I can fall in love with an actress, without suffering because she does not know anything about it.

The New Screens (by Way of Conclusion)

A recent advertisement for Orange, the mobile operator, shows a very meaningful scene. A man and a woman face a television screen; the man is on one side, at the end of a sofa, the woman on the other, at a distance, sitting in an armchair. She decides to move closer, sitting at the other end of the sofa, grabbing a tablet while simultaneously turning on the TV screen. With one more effort, she gets closer to the man, this time turning on the screen of a mobile phone. No doubt this scene could generate interesting analyses on the relationship between husband and wife, the latter taking the initiative of getting closer, but initially excluded from the sofa. In fact, the Orange advert mainly aims at promoting the multiscreen feature offered by the operator. Like the way the dematerialization of texts did not decrease paper consumption, the dematerialization of image, sound, and audiovisual has not diminished the importance of the screen; in both cases, it is quite the opposite. In the case of image and sound, not only has the need to use a screen increased – the screen has multiplied and become ubiquitous – but the screen types have also multiplied. Hence the possibility of multiscreen usage, which is both a diversification of sizes and functions of the screen, and the ability to constantly move from one screen to another.

In this kind of technological progress, technaesthesics, devices, and functionality interact to offer new possibilities in terms of action and attitude. Technaesthesics refers to the sensory features of technology, for example, different image brightness levels; the device is the kind of conditioning in which an apparatus appears, for example, the opposition between cinema projection and the television set; the functionality characterizes the different kinds of potential usages of all or part of the apparatus, for example, the possibility of watching a movie on a mobile phone as well as using it as a phone, or even doing both simultaneously. Take the example of the mobile phone, less to exhaust the subject than to open new perspectives. To these phones with screens, regarding which I have already stressed that the possibility depended on LED technology, was added touch-control technaesthesics and functional possibility. To the iconic effect, indeed very present in these devices, was added physical connection, the digital contact that not only creates an indexical relationship, as Peirce said, but mainly adds tactile or haptic sensations: the finger pointing on the screen is also

the finger that touches and caresses it, while the device is cradled in the other hand.

And that is not all. Among other things, every day we invent new pocket video projectors which, using a smartphone, could enable executives in business seminars to project statistics on a screen or a family to watch a movie in their holiday home. A wall is enough, provided it is blank and reflects light well. It can be referred to as a mobile screen.

Translated by Nick Cowling and Marie-Noëlle Dumaz

PART IV

Intermediality

Screens after Dos Passos's *U.S.A.* Trilogy: Current Answers for the Eyeminded Public[1]

Salvador Rubio Marco

It is not easy to decide upon the exact limits of so-called *Screen Theory*. Nevertheless, there is no doubt that Screen Theory has developed into a large discipline covering the theory of literature, philosophical aesthetics, art theory, film studies, the theory of architecture, and many more. As Annette Kuhn poignantly remarked:

> We are now in less uncertain (and somewhat less exciting) times, and the idea of a unitary discipline grounded in an all-embracing screen theory no longer fits the case, if indeed it ever did. On the contrary – and perhaps in reaction to the excesses of the era of militant theory – screen studies seems increasingly to comprise a concatenation of subdisciplines in which a focus on the historical, the local and the specific flourishes and any ambitions to create a totalizing theory are eschewed.[2] To a considerable extent, this retreat from Grand Theory has entailed a wholesale distaste for the essential activity of conceptualization of *theorizing*. The gerund is used advisedly: the idea of theorizing suggests process, an activity that is open and continuing rather than closed off and static. Today we may more appropriately imagine not a hypostatized "*Screen* Theory," but an open and interactive process of screen theorizing.[3]

The central hypothesis very often conferred to Screen Theory (that is, the idea that the apparent realism of the communicated content masks the role of the narrative apparatus on screen in order to *create* the spectator and the actual communicated content) is, in fact, something that may be found to be more or less diluted in different traditions (textual semiotics, for example) that are not limited to the review of *Screen*, such as the tradition of strict Marxist studies (Althusser), certain derivations of *cultural studies* and psychoanalysis (Lacanian, mostly). The idea of the masking screen is, in the end, the idea of the power (and, normally, the predominance) of the apparatus (in a broad sense[4]). And the theoretical op-

eration underlying the screen had the effect, like a magic wand, of revealing the presence of the power (and dominance) of the apparatus.

A significant part of contemporary developments of that idea may be understood as different ways of accounting for the consequences and the overcoming of the assumption of the *masking screen* idea. Jacques Rancière,[5] for example, has denounced the obsession of the critique school of thought to "opening the eyes" of a stupefied (or zombified) audience because of the masking screen (in the broad sense) effect, and, on the contrary, he claims that there is an *emancipated spectator* who would be able to participate actively in the task of finding the meaning of an experience in a critical and dynamic way. Dominique Chateau[6] has explored the connections between philosophical aesthetics and the theory of film in order to claim for the irrepressible relevance of the aesthetic experience in cinema. Juan Miguel Company and José Javier Marzal[7] propose to free the "captive look" of the contemporary audience claiming for an aesthetics of the motivation vs. an aesthetics of the automatic excitation of emotions.

Nevertheless, my aim is to point to two different (paradigmatic) ways of accounting for the consequences of the assumption of the masking screen idea (that is, in sum, the backbone of Screen Theory). The first way is derived from the work of Raphaël Lellouche[8] and Richard Barbeau,[9] and has a *genealogical* side and a *prophetic* side. The genealogical side of the theory relies on the description of three different moments (or phases) of the history of our relationship with bi-dimensional surfaces (a relationship that is translatable to the history of artistic practices in general, after Barbeau). The first moment is that of a "fixed support of inscription":

> From Prehistory, humans have developed techniques which allow them to carry out the objectivation of human memory in physical formats. In all its variety, these formats record the text and the image, allowing for both the preservation of the messages in text and image and the differed readings of the messages. And, even if the information becomes independent of the speaker, the remarkable thing is that it is something fixed, it is, *physically located* [...].[10]

The second moment is that of "the state-machine display":

> The indicators of an instrument panel, for example, inform us indexically about the inner state of the machines. Moreover, that mode of visualization very often involves some operations by the user producing a kind of dynamic relationship between reading and tactile manipulation (touch commands manipulation, for example).[11]

The third moment is that of the interfaces, referred to by Lellouche as "the amnesic screen":

> [I]t is, a surface allowing us to gain access to something which is not (properly speaking) on that surface nor is it inside the machine. [...] The screen on the computer and the screen on the television do more than merely display the inner state of a machine, they receive from the outside a message no longer a prisoner of physical formats, an information which is, then, *dislocated*: "The message, Raphaël Lellouche says, is no longer added to its format. The principle of the screen lies there: it is interchangeable, replaceable by another screen because of the information it displays." Having been liberated from its support, the message communicates fluently, and it travels and may be displayed on a surface becoming universal. [...] The screen really becomes an "amnesic surface-medium," an intermediate membrane, an interface![12]

The genealogical analysis of the conditions enabling the generalization of the screens leads Lellouche's Screen Theory to embrace the hypothesis of the disappearance of screens, for "the coming of virtual reality makes a division" corresponding to the step from interfaces of visualization to the absence of a barrier: "the abolition of screens."[13] It points to (after Barbeau, even if Lellouche has not specified it) visualization helmets and the simulated reality devices where the "interfacing" coincides (or at least almost) with the human organs of perception. Barbeau adds that the crisis of contemporary art has a lot to do with that "division" between a contemplative attitude to the surfaces and a more active attitude to the virtual objects leading to different degrees of immersion (as occurs in the interactive artworks on the net, cyberart, etc.)

Is that kind of Lellouche-Barbeau hypothesis valid today? I will elaborate on this question in the final part of this essay, but first let us continue with the second way of accounting for consequences of the Screen Theory assumption.

This second approach may be best illustrated by Stéphane Lojkine's proposal in a collective volume.[14] For him, a theory of representation based on the notion of screen allows us to surpass the paradoxes of the logocentric semiotics of Saussurean inspiration (that is, the theories proposing a rigid distinction between the pairing of icon/symbol used to describe the working of texts in front of the working of images). The collective volume edited by Lojkine starts with the assumption of a theory of representation, inheriting the semiotic and psychoanalytic[15] tradition, based on a notion of screen as a device of desire which reveals itself and hides at the same time, and which involves projection on both sides (projection of the image on the screen, but also the *desiring* of the projection by the spectator on the screen); in other words, the notion of screen presupposes that the image is something seen, but also that the image is looking at us; that is, that the image *knows* that it is something watched by us. In Lacanian terms, the screen

is merely that mediation between the subject who is seeing and the object with which the subject interacts.

There are several advantages of such an approach. Firstly, it allows us to overcome the literal concept of screen, traditionally applied just to film and audiovisual productions, and opens it up to literary or painted productions. Secondly, it opens up a historical dimension of development: Lojkine's text[16] refers to the 18th century as a time of "the overflowing of pictorial semiology in the text" (*débordement de la sémiologie picturale dans le texte*) after Diderot's *Salons*, and as the time of a "philosophy of the effect of the image in the text and the appeal to the senses."[17]

Finally, such a scope provides a subversive component, to the extent that it confronts the submissiveness of the classical rhetoric of the representation "considering the creative act right away as an act of submission (to the technical rules, to an ideological frame, or even to an imaginary grid). To locate the screen at the heart of the representation means to give it over to the act of lifting the screen, a lifting which is intended to reveal what we need to know."[18] To summarize, it would not be very daring to say that this second approach (Lojkine et al.'s *abstract* screen) is just the result of taking Screen Theory's central idea of the "masking screen" and to lop off the first word leaving just "screen" (taking for granted, of course, that a screen cannot be thought of as anything other than a masking screen).

Beyond the acceptance (or rejection) of the starting principles of the last approach, what makes it interesting to me is, curiously, something which seems much more evident in John Dos Passos's *U.S.A.* trilogy:[19] Dos Passos's narrative has a visual character, or visual nature, that is not used up by adopting visual patterns in the narration (as visual descriptions, or kinds of shots, cross cutting, etc.). To account for that complex visual character, we need to resort to a complex (more abstract) notion of screen, as we will see later. In essence, there seems to be a good reason for making use of "screen" concerning a literary work, even if we are dealing with such relevant work as Dos Passos's *U.S.A.* trilogy. Moreover, I am interested in the contemporary question proposed at the opening of that second approach to "screen," a question answered (*avant la lettre*) by Dos Passos. The question is: Is there really an intrinsically subversive concept of screen (the lifting of the screen: *la levée de l'écran*) in Dos Passos's *U.S.A.* trilogy? In other words, how is it tainting the aesthetic and political roles of formal and technical innovations for an eyeminded public, not just in the context of the 20th century, but rather in the current context of the 21st century? Let us deal with the central object of that text and the most argumentative part of it.

A thorough synthesis of the contributions of scholars specialized in Dos Passos's work (North, Suárez, Beal), has resulted in the following observations about the "abolition of screens" predicted by Lellouche. On the one hand, Lellouche's idea is based on the duality of activity vs. passivity concerning the

audience's attitude, and it may be perfectly applicable to U.S.A. trilogy. On the other hand, Lellouche's prophecy, in the literal sense of a physical abolition of screens in the real world, is difficult to prove. Maybe he is right concerning the evolution of new devices for virtual reality in training simulators and video games, even if what we currently see around us is the omnipresence and multiplication of screens, in a literal sense, in all the spheres of our life. My thesis is that an accurate reading of Dos Passos's U.S.A. trilogy proves that the distance between the literal use of screen (Lellouche/Barbeau's use) and the abstract use (Lojkine's use) is not as big as we thought, at least initially.

However, there is one more basic question connected to my interest in U.S.A. trilogy and the concept of screen I have often wondered about: What are the "Camera Eye" and "Newsreel" sections doing in the whole structure of U.S.A. trilogy?[20] Are they a mere excrescence or penance for the reader, embedded in more fluent fiction stories and biographies? Are they simply an exhibition of innovative virtuosity? Before turning to these questions, let us first summarize the main ideas of my interpretation of U.S.A. trilogy.

One should take into consideration that the starting point for this analysis lies in several hypotheses and thesis from scholars that have been further developed after my own reading of Dos Passos's work and the aforementioned questions. The main ideas are:

1. The idea (supported in Beal) that the task, self-imposed by Dos Passos in U.S.A. trilogy, to show how "U.S.A. is the speech of the people" may be achieved through a network structure.[21] And for that reason Dos Passos has to be recognized as a pioneer of the network.

2. The idea (launched by North 2005) is that U.S.A. trilogy includes the visual character of the new technological media critically, and not in a mere mimetic or laudatory way. That is to say, U.S.A. trilogy denounces the negative effects of the process of change in American society from a "wordminded people" to an "eyeminded people."

3. The idea is that U.S.A. trilogy also denounces the perverse use of the formal innovations of modernity (that is, the artistic avant-gardes) in the new language (publicity, newspapers, politicians, etc). It involves crucial notions, mainly as a "montage."

4. The idea is that U.S.A. trilogy is able to make such a denouncement by overcoming what is, apparently, no more than a mere use of those innovative resources originating from modern avant-garde movements. In order to explain the ways Dos Passos's work overcomes the merely exhibitive function of innovative resources, Michael North[22] proposes a range of Dos Passos's "dislocations"; to which will be added some atmospheric functions, contaminations, background contrasts, reading regimes, and contemplative moments.

5. The idea is that Dos Passos's work allows us to reexamine the problems of Screen Theory in different complementary directions:
   a. The proliferation of screens in the world of eyeminded people (shop windows, photos, movies, etc.) and the claim for a certain "logo-centrism" (a wordminded people).
   b. The network structure as a way of dissolving a kind of icon-centrism (close to the "masking screen") by re-locating the public towards an active and responsible role, though not automatically (for this would mean repeating the same mistakes as eyeminded people and icon-centrism: an interventionist attitude toward the public).
   c. Michael North underlines Dos Passos's condemnation of the isolating effects of the new media in the world of eyeminded people, but we have the right to pose the question about the isolating effects of the new media in our current time (videogames, social networks, etc.) Is our time one of screen abolition or one of screen proliferation? Is the abolition of screens yet to come? What can we learn from Dos Passos concerning these questions?
   d. The screen, in the abstract sense, is a limit (a meeting point and a boundary, at the same time) between desire and reality. In other words, the screen is a kind of pilot lamp (or underlining) of the proper desire and its (constitutive) limitation, like a limit and mediation between subjectivity and objectivity, hiding and revealing, self-consciousness of seeing and being seen, looking at and being looked at. Indeed, the literal screen and camera can be involved in abstract screen roles. *U.S.A.* trilogy offers us excellent examples of that idea.
   e. Dos Passos comments on the amnesia caused by the images in eyeminded people. Is it a confirmation of the "amnesic screen" described by Lellouche as a characteristic of our current time? Is amnesia intrinsic to images (all kinds of images)? As a result, is the term "amnesic" an excess baggage in the expression "amnesic screen," like "masking" was superfluous in the expression "masking screen"?

Being well provided with our map, let us penetrate deep into Dos Passos's forest.

Wesley Beal[23] has cleverly remarked that the scholars' return to *U.S.A.* trilogy, after the revivals of the 1980s and 1990s, has a relevant connection with the turn towards network theory in humanities. Certainly, the interest in Dos Passos's work has depended narrowly on the suspicious attitude of his left-wing admirers on one side, and the right-wing critics on the other, regarding Dos Passos's complex political engagement.[24] But the formal complexity of *U.S.A.* trilogy invites Beal to claim that "he uses networks to mediate his formal strategy of fragmentation and totalization as a model of historical study."[25] The "historical study" places Dos Passos as a pioneer of the "network narrative" genre proposed by

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scholars such as David Bordwell[26] or David Ciccoricco[27] for late 20th-century and 21st-century films and literature (such as Robert Altman's NASHVILLE (1975), and SHORT CUTS (1993), Michael Haneke's 71 FRAGMENTS (1994), or Paul Haggis's CRASH (2005), and Michael Joyce's TWILIGHT, A SYMPHONY (1997)). In particular, Dos Passos referred to the trilogy's structure as a "four-way conveyor system" comprised of 68 Newsreels, 51 Camera Eyes, 27 biographical sketches, and fictional narratives centered on 20 anchoring character-threads. It prevents U.S.A. trilogy from being a mere "collective novel" and offers a networked vision of the United States and of narration itself. In his architectural attempt to catch "the speech of the United States,"

> Dos Passos de-centers the character-threads by introducing that element third, behind the first volleys of Newsreels and the Camera Eye that inaugurate *The 42nd Parallel*. With the plot-driven narration marginalized from its usual position of authority, U.S.A. proceeds to locate its narration in the interstices of the four nodes that compose its vision of the United States. The "conveyors" indeed cooperate as an assembly line to fill in the gaps left by the other nodes [...].[28]

Nevertheless, the four modes of narration in U.S.A. trilogy "are not merely perspectivism," nor "are they interchangeable or divisible vantage points from which to view American history." Rather:

> [T]hey cooperate as a network to reflect the very networking of that history. For instead of a diaspora of fragments performing abject disconnection, the structure of U.S.A. is a nodal one: one's reading of the Camera Eye in isolation imperils an understanding of Dos Passos's attempt at formal totalization. The formal logic of U.S.A. transforms the modernist aesthetic of fragmentation into a constellation of nodes, a network.[29]

At this point, Beal deals with the relationship between the term "montage" and the term "network" avoiding a mere substitutive operation "as if this were some kind of shell game of postmodernist and modernist lexicons."[30] We will reconsider Beal's reflection later, regarding the "montage" concern.

Several of Dos Passos's scholars have remarked on the relevance of his close acquaintance with actual filming practice, and especially with Eisenstein, Vertov, and Joris Ivens. In fact, the "Camera Eye" label refers to Vertov's work. Nevertheless, from the beginning of his career Dos Passos was very sensitive to the relationship between the formal possibilities of striking innovations in the visual arts and social changes ("that were at the very least politically and aesthetically ambiguous"[31]). Those changes overflowing the borders of traditional visual arts and invading the full world of the modern public involve, for Dos Passos, a

change of paradigm of a sort concerning the status and habits of the public in America:

> The people my parents knew had hardly any direct visual stimulants at all. There were engravings on the walls and illustrated magazines and reproductions of old masters even, but the interest in them was purely literary. The type of drawing current in the late nineteenth century had such meager conventions of representation that it tended to evoke a set of descriptive words instead of a direct visual image.[32]

Dos Passos is quite expressive in order to name that change: "from being a word-minded people we are becoming an eyeminded people."[33] The actual meaning of "Newsreel" and "Camera Eye" sections in the frame of the *U.S.A.* trilogy corpus cannot be grasped on the fringes of the idea that:

> For Dos Passos, the subsumption of avant-garde techniques within this newly industrialized and commercialized visuality was clearly retrogressive. In fact, the whole turn of an "eyeminded people" toward ever more powerful visual representations distressed him. As early as 1925, he was lamenting the power of "the movies and radio and subsequent mechanical means of broadcasting entertainment and propaganda" insofar as they drove out of existence "what might be called the arts of direct contact." Live drama, sporting events, and jazz dancing still provided what "the chilly fantasmagoria of the movies" could not: palpable social experience.[34]

A careful reading of *U.S.A.* trilogy, then, shows the complexity (not a simple equation, in any case) of the relationship between avant-garde art, popular visual entertainment, and populist politics. It may be evident in the conservative populism that lies behind most of the enthusiasm for popular visual arts like photography and newsreels in the United States, but it is not so evident in the enthusiasm of the – small minority, though culturally influential – left-wing intellectuals in the United States. As North aptly remarks:

> For an "eyeminded people" is not awakened to the world by the expansion of its visual sense but is actually separated from it, *screened* from it, by visual representations whose immediacy is paradoxically and impossibly greater than that which they represent.[35]

The presence of the term "screened" in North's quotation is, for me, especially relevant regarding the two meanings – the screen as a representational surface (literal meaning) and the screen as a device of desire (abstract meaning) – that I

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have distinguished between in the first part of this essay, and it will be reexamined later when discussing "screenization."

The "Camera Eye" and "Newsreel" sections have much less to do with visual objective approaches to reality than may seem apparent at first sight, and this is especially true if we become bewitched by the names of those sections. "Newsreel" sections are not actually newsreels at all, but rather a kind of *collage* made up of newspaper headlines, stories clipped from newspapers, scraps of song lyrics, radio commercials, etc. Moreover, the apparent visual character of "Newsreel" sections is called into question by the fact that the role of words and sounds take the place of visual elements. "The Newsreels were intended to give the clamor, the sound of daily life. In the Biographies, I tried to produce the pictures."[36] Another aspect that is called into question is what counts as news, because "Dos Passos's newsreels usually contain a decentration of important world events, interlarded with publicity stunts, crime stories, and sports, an amalgamation that in certain instances they seem to mock overtly," as if "Dos Passos is telling his readers that information offered in this way is meant to be consumed, not considered."[37]

The "visual character," then, is present there, though in a paradoxical and very critical way: in the Newsreels Dos Passos cuts up and spatially rearranges the words from his newspapers in a way that seems to impose the triumph of a spatial or visual organization (an experiment of avant-garde *collage*) "in which elements can be arranged in many different ways without any particular consequence,"[38] but deep down "[s]ubtracted along with sequence, however, is the causality that might make events intelligible and, along with it, the space in which the observer's own actions might have perceptible effect."[39] For North, Dos Passos is not interested in representing the appearance of the visual, but rather in representing the ambiguous effects of it on social life, either revolutionary (a reorganization of modern life) or conservatively (a regressive repetition).

The "Camera Eye" sections are far from the overtly and literally visual deal that their title implies. In an accurate reading, a pleasant surprise is to realize the fact that there are plenty of them that are predominantly or even exclusively aural, not to speak of the relevant role conceded to smells. Moreover, the "Camera Eye" sections are also far from the association of cameras with documentary realism so common at that time in the US and, in particular, far from the association of the camera with *objectivity* – socially and politically engaged – so common in the leftist heritage of the European (and Russian) traditions of "camera eyes."[40] Dos Passos indicated in a comment in a late interview to the effect that the "Camera Eye" sections were "a safety valve for my own subjective feelings."[41] This is indeed coherent with the fact that Dos Passos claimed that the "Camera Eye" sections were "to indicate the position of the observer."[42]

The echoes of the notion of "eyeminded people" and the "screening" effects on the public reappear in North's text when he evaluates the scope of such "subjectivity":

> The objectivity of the camera eye becomes a kind of subjectivity, [...] there is something structurally isolating in eyesight itself, something that the camera exaggerates by separating the other senses from the visual, physical presence from the act of seeing, and one moment in time from every other. [...] The introductory vignette that Dos Passos wrote in 1937 to help frame the finished trilogy sets an unnamed young man walking through a crowd "with greedy eyes, greedy ears taut to hear, by himself, alone" (p. 1). The eyes, in fact, never receive the "answering flicker of eyes" they search for, "only the ears busy to catch the speech are not alone" (p. 2). Because, as Dos Passos famously says at the end of this vignette, "U.S.A. is the speech of the people" (p. 3), sociality is inherently aural, which seems to make the visual, especially the silent visual contact of the modern crowd, inherently isolating. [...] Thus many of the "Camera Eye" sections seem in a sense to turn the camera around and focus it on the ostensible observer, so that these sections are not about looking but rather about the discomfort of being looked at.[43]

The self-consciousness that arises as a manifestation of the screening resulting from that subjectivity will be considered later, in close connection with Dos Passos's vital attitude. Dos Passos shared "a *spectatorial* attitude" with a tiny group of Americans:

> This spectatorial notion of the self is based in part on the experience of a tiny group of American expatriate writers, who felt isolated as college students in the United States because they were incipient aesthetes and then even more isolated in Europe because they were expatriates. It was a group that, according to Malcolm Cowley, derived much of its character from the experience of noncombatant service in World War I, an experience that was shared by Dos Passos, Hemingway, E. E. Cummings, Harry Crosby, Louis Bromfield, Robert Hillyer, Dashiell Hammett, and [Malcolm] Cowley himself, not to mention the persona of the "Camera Eye" sections of U.S.A. The chief result of this experience was what Cowley calls "a *spectatorial* attitude." Observing the war from a distance, unsafe though it may have been, turned them into "watchers" of what seemed "a special circus [...] a spectacle."[44]

To summarize (for the moment, at least), consider one of North's most powerful ideas:

The spectatorial Camera Eye is actually just an especially intense case of the "eyemindedness" that Dos Passos decried in 1936, while he was finishing *U.S.A.* The problem of the trilogy is not just the decay of language, as has been persuasively argued by a number of critics, but the replacement of language in the social world by visual imagery and the attendant change when Americans shift from being "a wordminded people" to being "an eyeminded people."[45]

In *U.S.A.* trilogy, Dos Passos is undoubtedly using the concepts of collage and montage that he knew very well thanks to his close relationship with the European and Russian avant-gardes (Eisenstein and Vertov in particular). Aside from "Newsreel" and "Camera Eye," direct micro-applications of montage techniques may easily be found in several moments of fictional character stories. Is it coherent with Beal's assessment for the general structure of the work to be a network structure? Beal critically summarizes the points of view of Tichi and Irr, who recognize the relevance of the aesthetics of montage in Dos Passos's work, but they refer to it mainly in the "contemporary model of machine and structural technology" (Tichi and "the logic of collision"[46]). Beal's point of view is that:

> Framing the trilogy in terms of montage provides a helpful visual analogy for the text and rightly asserts Dos Passos's debt to film, but it does not fully engage the logic of *U.S.A.*'s form. Instead, what many readers understand as *U.S.A.*'s appropriation of montage techniques would be better viewed within the frame of the network. In the montage experiments of modern film and even the photography and advertisements that experimented with the new technology of the half-tone press in the 1880s, old meanings are overturned and new meanings are produced by different techniques – sequential revolutions, overlays, split images, mirrored images, and so on.[47]

In fact, "a networked reading of montage focuses, not on the collisions, but on the collaborative moments the technique facilitates,"[48] based on subsegmentation and the simultaneity of its subsegmentation (so characteristic of Fordism in industrial production). It allows Beal to introduce the concept of a "networked montage" (vs. European "disjunctural montage"):

> *U.S.A.*'s narration has the multi-dimensional force of montage, but the logic of its productive capacity is fundamentally different from the theories and practices of montage that rely on collision. Disjunctural montage and networked montage both operate on a constellar model, but networked montage has the separate goal of totalization – a goal that is announced in the very title of Dos Passos's trilogy. And this networked montage may be a uniquely American intervention.[49]

Through that introduction, Beal seems to reconstruct "montage" ("networked montage") not merely as a particular technique, but as a structural model. Nevertheless, Beal's thesis is that this is not enough to recognize Dos Passos's borrowing of montage techniques from avant-garde cinema, for the actual goal has to be to frame Dos Passos's U.S.A. trilogy as a crucial contribution "for the rise of the network as the dominant figure of a literary history and an intellectual history for the American twentieth century."[50]

One of my own main theses here is that U.S.A. trilogy goes beyond a mere application or adaptation (even ironic or parodistic) of avant-garde techniques. North essentially describes the same idea when he says:

> Perhaps some unexpected answers to these questions are to be found where the trilogy violates its own form, where the boundaries between the sections give way a little and the montage form begins to reveal some of the potential that its proponents have always found in the spaces between individual elements.[51]

Juan A. Suárez, in a similar vein, claims there should be a poststructuralist-indebted interpretative strategy "that would endow with meaning not only what is actualized in the text but also the text's absences and omissions."[52] This would include the practice of ideological and historical critique – aware of the documentary modes and the left's idealization of the camera – that is able to explain the actual meaning of the terms "camera eye" and "newsreel" in U.S.A. trilogy. Suárez remarks:

> Hence the most forthright proposal of USA, recharging language with critical and political effect, is confined to the subjective realm of the "Camera Eye" interludes. Exiled into interior speech, it remains a utopian memory seemingly unrealizable in the public idiom of the "Newsreels" or the popular one of the character accounts.
>
> We can then conclude that Dos Passos's USA deflates the progressive potential attached to the ideologies and practice of the newsreel and camera-eye aesthetic in 1930s left media culture. Rather than instruments of knowledge and agitation, USA's "Newsreels" and "Camera Eye" fragments embody respectively confusion and sham, and solipsism. Whatever progressive political potential may be ascertained in them stems from a deep-rooted sense of refusal, a bitter turning away from dominant orders and their languages, rather than from the cognitive maps these sections provide or from the degree of political effectiveness they restore to "the common speech." The utopianism of the left newsreel/camera-eye film tradition is then a road not taken, a possibility of the cultural system not actualized in Dos Passos's trilogy.[53]

North introduces what he calls "dislocations" in order to account for the absent-present logic so relevant in U.S.A. trilogy. A good example of dislocation is the sense of asynchrony produced by the sudden apparition of characters, and the shifts and jumps in their stories:

> There are often odd dislocations, shifts or jumps backward or forward in time, when characters with their own narrative lines appear suddenly in the narratives of others. Thus a considerable section of Richard Savage's story is telescoped unmercifully when it reappears again in Anne Elizabeth's chapter covering the same period of time (pp. 702-703). Joe Williams's rueful admission, "All my future's behind me," is actually literally true for the reader, who has already seen Joe's future in the narrative of his sister Janey. The sense of asynchrony this gives, as if the characters were all living at slightly different speeds, reflects the isolation within which they live, the lack of a mutually referable standard, even of time, but it also makes the trilogy read rather cinematically, with flashbacks and parallel stories interrupting one another, until the main narrative becomes the story of these interruptions. In a very few cases, however, dislocations of this kind seem to reveal something else entirely, a hidden order, a truth that is social in a very strict sense, since it seems to take more than one person to apprehend it.[54]

In the vein of the relevance of an absent-present tension, I have defended, with examples of several passages of U.S.A. trilogy,[55] that Newsreel sections have a general role consisting in preparing the emotional atmosphere or climate for the reader before the fictional fragments, the biographies, and the Camera Eye sections. It is not easy to make that atmospheric task more specific, for it is not used up in a merely historical introduction (even if the readers acquainted with the historical facts or current expert readers in History could detect it), but rather there are other general effects in the audience that are maybe more important in terms of an unusual reading regime that is imposed on the readers.

Newsreel LXI may be one such example. There are some abstract *leitmotivs* recurring throughout the entire Newsreel: the idea of something elevated (or maybe idealized) and the idea of something breaking or screeching in that elevated frame or background. These ideas appear throughout pieces of songs, news, headlines, radio commercials, etc. But it is not by chance that the story of Margot, which immediately precedes Newsreel LXI, describes the social rise of Margot Dowling because in the end she has learned to take advantage of her feminine power over men. Nor is it by chance that Charley Anderson's fragment of story, which comes just after Newsreel LXI, starts with a dialogue between Charley and his secretary Cliff in an elevator ("We'll knock 'em higher than a kite").

Then, Dos Passos disturbs the (more or less) comfortable reading regime that the reader may use in the other sections and *forces* him to change to a new regime, which avoids a strictly concrete check up of the names and facts referred to in order to concede a prior role to abstract and free mental associations, climatic impressions, humor, and even imagination. Though, I am sure that Dos Passos's *collage* procedure is not chaotic or random (in fact, there are too many productive relationships with other sections to think that it would be so). That idea is very coherent with a more general idea that lies (I think) at the essential heart of the "four-way conveyor system" architecture of U.S.A. trilogy: the four-way conveyor system is traversed by an underground system of contamination and echoes involving the four sections. The more evident ones involve the character's crossings and re-apparitions (Bingham, Savage, Eveline, etc.), but the more interesting manifestation of that parallel system may be found at the level of literary procedures. To mention just some examples: the use of the copulative connections in long sentences (and...and...and...), remembering the children's simple way of narration, which appears very often in "Camera Eye" sections (7, 8, or 34, for example) and contaminates some moments of the fictional character's sections and biographical sections; the poetic style so important in Camera Eye sections occasionally invades the biographies and, naturally, the fictional stories; the *collage* technique so basic in Newsreel sections occasionally invades the biography sections (see Mister Vilson, for example); the non-punctuated syntax (so common in Camera Eye sections) invades other sections (see again Mister Vilson's biography, for example).

That kind of coincidence is not the main procedure of the parallel system of echoes and contamination. The networked architecture of the "four-way conveyor system" produces a source of meanings resulting from the tension between some elements and the background of the previous facts and climates. Again, we can simply show some examples of the huge range of cases, for they either work in the long term or the short term. A long term background procedure is to tell the story of Nena in order to superimpose the story of Richard Savage's relationship with Nana. It contributes powerfully to shape the very particular scope for the reader. The echoes would also be forward-directed ones: the sickeningly sweet songs of the young Moorehouse prefigures the wily future king of publicity and, even works to shape, of course, a moral position of the narrator (and the reader) towards him. A last example: the use of the interior monologue (characteristic of Camera Eye sections) to show Dick Savage's self-justification for his reaction to Nena's pregnancy in the fictional story included in 1919.

North has shown very interesting examples of the subterranean forces working at the heart of the narration: the (homo)sexual hidden impulses mixed with the shared experience of war in Joe Williams's and Richard Savage's characters. Those subterranean forces are, of course, closely linked with the tension atomization-commonality which deeply concerns the role of new media

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(screening and eyemindedness included) that constitutes (in my view) the actual core of U.S.A. trilogy:

> This seems to be the trilogy's strongest argument on behalf of the new media as well, that the very atomization enforced on the audience brings about, in chance episodes, a new commonality. The meeting of Joe Williams and Richard Savage is one of the clearest exemplifications of this process in U.S.A., but if it is easy to see from their experience how both are contained within the war machine, it is correspondingly difficult to reconstruct the way they are linked within the machine that runs a certain kind of sexuality. The homosexual connection within the text remains as unavowed, unacknowledged, and underground as it is in the life of Richard Savage. No one, it seems, can be free enough to make this connection, not even in the dream world of the movies.[56]

The last suggestion for that logic, which constitutes a truly parallel system, has to do with the tendency towards a wandering attitude of all the characters of the novel (including the varied self who is behind the Camera Eye sections and the critical and even ironic point of view of the narrator in the biographical sections), which corresponds to the absence of a morality and the absence of a meaning of life in U.S.A. trilogy. In place of that meaning, maybe the most characteristic of Dos Passos's points of view is the brief moments of contemplative calm where the characters find sometimes, if not a meaning to life, maybe a certain peace of mind, an oasis of reflective distance into the chaos: Joe on the deck of the ship, Mac or Johnny on a train or in a café at sunrise. That literary procedure underlines again the backstitches, the interstices of the stories, and even of the human and historical thread weaving together the trilogy and even the life of "American speech." No doubt, it refers to the cut, the silence, the junction between the strips of newspapers in the *collage*, or the turning of the dial tuning a radio station, the *montage* in cinema, or the subjective and associative mortar in the Camera Eye sections. At this point, it is time to return to the Screen Theory questions about the concept of screen and the aesthetic and political roles of formal and technical visual innovations that were posed in the first part of this essay.

Dos Passos's critique of "eyeminded people" may be useful in order to reconsider the "logocentrism" referred to by Screen Theory theorists. Aside from Michael North's remark that "The rather strange phrase may well have been somewhat common at the time,"[57] English dictionaries report "eyeminded" as follows: "Disposed to perceive one's environment in visual terms and to recall sights more vividly than sounds, smells, etc." (Random House); "Marked by a predominance of visual imagery in one's thought processes or mental productions; given to extensive or excessive visualization in one's mental operations" (Merrian-Webster). Screen Theory derivations (at least, in the Lellouche's/Bar-

beau's version that I showed before) have claimed that there is a role for screens in order to explain the evolution from the logocentric phase to the icon-centric phase. It would be very simplistic to identify "wordminded people" with "logocentrism" and "eyeminded people" with icon-centrism, for it is quite evident in the Screen Theory literature[58] for the "icon-sphere" to require a new regime of relationship between words, images, and signs in general, and not a mere substitution of the old one (indeed, that of logocentrism). Nevertheless, Dos Passos's "eyemindedness" is not a simple critique of the logocentric phase, for it works in the frame of the complexities and the antinomies of the icon-centric phase. The primary fact, which cannot be ignored, is that *U.S.A.* trilogy is a literary construction (made of words), and thus Dos Passos is claiming using words (which evoke images, tastes, smells, touches, and sounds, of course) as a denouncement of a certain abuse of visualization in the modern world (in America, particularly). The consequences of that abuse of visualization is a *screenization* of reality (in the sense of a transformation of the previous devices of representation, based normally on words, in shop windows, movies, posters, billboards, etc.). Moreover, screenization here means a reductionism of the complex visualization that the avant-garde proposed when they introduced the procedures that were quickly borrowed by consumer developers of the eyeminded peoples.

A second fact that cannot be ignored is that *U.S.A.* trilogy has, as a general goal, the aim of grasping the speech (or ways of speech) of the USA, which presupposes at least that Dos Passos trusts in the (complex) capacity of words, and its use by the huge variety of American people, to express what US identity is and how that identity is built in a very complex way in a crucial period of its history. Certainly (as Suárez and North have amply shown) the screenization of the eyeminded people's world is mainly responsible for the isolation, manipulation, acquiescence, and despair of Americans; the fictional characters of *U.S.A.* trilogy illustrate it brilliantly. And the false modernism (the crude exploitation of formal avant-garde innovations) is also at the root of that process.

> If the social problem that *U.S.A.* is supposed to confront is not just class division but also the fragmentation of the public into a mass of individualized spectators, then how could the form of the trilogy itself be read except as another symptom or a collection of symptoms? If modernism itself is so thoroughly implicated in the bemusement of the public, then how would it have been any different if the partially autobiographical Savage had gone on to write *U.S.A.* instead of enlisting in Moorhouse's advertising army? Is the form of *U.S.A.* perhaps a form of despair, of acquiescence in the face of social facts, as leftwing critics have long claimed in the case of other modernist masterworks? In this case, wouldn't it also be fair to say that the modernist form of *U.S.A.* is not modern at all but backward-looking and belated, gripped by a past it cannot change?[59]

Another tool of Screen Theory, which I have summarized as the masking screen, can be interpreted, from the classical Screen Theory framework, as the way in which the screen device is *naturalized* in order to disappear from the eyes of "eye-minded people" who become acquainted with the new way of accessing the world. What is Dos Passos's perspective concerning that problem? If we are confident in the networked character of *U.S.A.* trilogy revealed by Beal, we can find the solution there. For Dos Passos has designed a literary device that requires the reader to redirect him/herself towards an active and responsible role. It means that the goal of *U.S.A.* trilogy does not stop at a criticism of the dangerous consequences of the capitalist exploitation of images to claim for a return to a logo-centric regime, but rather that it pushes the reader to adopt a new complex role (active, diverse, and engaged). Is this really "new?" Maybe not for a 21st-century public acquainted with the Internet, zapping, TV *à la carte*, and videogames?

North underlines some passages in *U.S.A.* trilogy describing characters going to the movies:

> In the earliest stages of the Charley Anderson narrative, Charley and his girl-friend Emiscah are turned to "jelly inside" by *Birth of a Nation* (p. 331). Later in the trilogy, Joe Williams and Delia have the same experience at *Four Horsemen of the Apocalypse* (pp. 416-417), but in this case their excitement is mixed up with the "Belgian war pictures." The excitement that they feel with "the war and everything flickering on the screen" is clearly sexual, but it is also oddly isolating and enervating: "Del said wasn't it terrible and Joe started to tell her about what a guy he knew had told him about being in an air raid in London but she didn't listen" (p. 416). As excited as they are, the characters are actually connected to one another only through the screen, in a way that anticipates Guy Debord's analysis of thirty years later: "Spectators are linked only by a one-way relationship to the very center that maintains their isolation from one another."[60] When Dos Passos laments the demise of the "arts of contact," he does so at least in part because these arts, unlike movies and the radio, help keep their audiences in contact and thus foster a viable social world.[61]

However, North's interpretation of Dos Passos's criticism of the social and political role of physical screens is quite evident and allows him to say that:

> The truth of the matter, of course, is that the camera has conspired with capitalism in such a way as to make its contradictions more painful and less obvious at the same time. [...] The contradictory and yet necessary relationship between loneliness and conformity is thus cemented more firmly into place by visual habits that the camera has made pervasive.[62]

It breaks its riverbeds and floods the abstract sense of "screen," concerning the tension between the spectators' projection and the dominance of the apparatus, in the previous movies' episode.

U.S.A. trilogy resists, then, a fixed message or morality, so difficult for someone (like Dos Passos) involved in such a complicated political situation in the 1930s.[63]

It is not easy, furthermore, to find here an answer to the question about the abolition of literal screens posed by some Screen Theory developers (such as Lellouche). Maybe the new virtual reality devices will transform or even make obsolete the same screens which, at the moment, seem to be ubiquitous in our contemporary surroundings. Nevertheless, that question has a very secondary role in this essay, and I do not think that Dos Passos's work could teach us anything useful in that direction.

Instead, as we have seen before, the screenization derived from the criticism of "eyeminded people" in *U.S.A.* trilogy is not exhausted by the criticism of capitalism and its use (or abuse) of visual media (in a similar vein as Adorno, Benjamin, the Marxism of *Screen* or the French *théorie de l'espectacle*), but rather at this point it opens up another meaning of "screen," which forces us to take on board the more abstract concept of "screen" put forward, for example, by Lojkine. In this sense, the screen is here rather the pointer between objectivity and subjectivity that is, on the one hand, unavoidable (for it is present in all of our attempts to gain access to the world) and, on the other hand, a very useful symptom (or tester) for particular cases of representational situations.

The screen, in the abstract sense, is a limit (a meeting point and a boundary, at the same time) between desire and reality. In other words, the screen plays the role of stool pigeon of the mechanism of desire and its (constitutive) limitation in the mediation between the subject and the object: hiding and revealing, seeing and being seen, looking at and being looked at. Thus, camera and literal (physical) screen are involved in the abstract "screen" for they play different roles on different occasions.

As North's previous examples of characters going to the movies have shown, screen is, then, an ambiguous device, for it concentrates people's desire, connecting people but at the same time isolating people, taking the place of a two-way or contact relationship. However, one of the most interesting moments in *U.S.A.* trilogy (from Camera Eye sections, to be precise) is, no doubt, this one:

[A]fter the Paris General Strike of 1919 when the protagonist finds himself peeping "out from under the sliding shutter that's down over the door into the hard rain on the empty streets" (p. 700). There is perhaps a submerged pun on "shutter" in this particular episode, one that makes the shutter of the camera eye into a kind of barrier, a barricade, behind which the persona can hide, where the desire to look out contends with the dread of being seen. The

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utter disengagement of this particular camera eye from the revolutionary events around it illustrates again the way the progressive possibilities of the new visual media give way to isolation, impotence, and retrogression.[64]

The camera works here as a screening tool that draws the position of desire (*désir*) of the Camera Eye persona, who "represents a particular kind of subjectivity," "a self-consciousness polarized to the rest of the world by mutual regard."[65]

It is not difficult to read that moment (the peeping observer) like a metaphor of the American writers in Europe during World War I (and the Spanish Civil War); that is, the "*spectatorial* attitude" remarked on by North.[66] In fact, *U.S.A.* trilogy may be understood as a whole screen, and its author, Dos Passos, as a seen voyeur.[67] Naturally, those interpretations concern a literary text interweaved with visualization in very complex ways.

There is a new link between Screen Theory's troubles and Dos Passos's diagnosis of "eyeminded people": amnesia. Dos Passos remarks on the amnesia caused by the images in "eyeminded people" and Lellouche refers to "the amnesic screen" as the phase corresponding to our current time.

> Thus the Camera Eye persona seems to carry nothing with him from segment to segment, so much so that it would be difficult to argue, without the parallel episodes from Dos Passos's own life, that these segments do in fact represent a single character. But the same is true of the far more naturalistic characters in the narrative sections of U.S.A., who travel much more continuously in time but manage to retain just as little of it. In fact, it would not be far wrong to say that the narrative of U.S.A. itself suffers from "an idiot lack of memory." As Donald Pizer has noted in his excellent study of the trilogy, each narrative segment seems experientially isolated from all the others, even the others devoted to the same principal character.[68]

Here, amnesia is related to the fragment. Lellouche's "l'*écran amnésique*" somewhat underlines the "forgetting" of the message by the screens: the screens are becoming a mere format for completely interchangeable messages, mere mediation surfaces, which are not determined by the nature or characteristics of their messages.

Physical screens in *U.S.A.* trilogy (film screens, advertising, shop windows, etc.) become more common and share a certain amnesia with "l'*écran amnésique*" concerning the origins of their formal innovations in avant-garde artistic (or aesthetic) creations. Many characters of fictional sections in *U.S.A.* trilogy (Eleanor Stoddard or Eveline Hutchins, for example) are well acquainted with the European artistic tradition and are a testimony to that link perverted by the political and commercial exploitation of the forms. In that sense, *U.S.A.* trilogy is able to reveal, in a literary work, the main goal of Screen Theory regarding the screen: to

show that every screen is, in a way, a "masking screen," for it tries to mask the *mediate* (that is, *not immediate*) conditions of its working, and to show that the history of screens is the history of the *naturalization* of that mediation to the point at which the screens lose their excess baggage ("masking") in order to become just "screens," allegedly enabled to show every bit of the reality they refer to.

In a similar vein, U.S.A. trilogy reminds us how the "amnesic screen" has made a historical effort (in that crucial phase of the history of America) in order to go down (to make us forget) the excess baggage of "amnesic" and to become simply "screen."

I do not think that Dos Passos's notion of "amnesic screen" implies that amnesia is intrinsic to images (to all kinds of images in general). Firstly, physical "screen" is not equal to "image," and secondly, abstract "screen" is not equal to "image" either. And there is a third reason: in U.S.A. trilogy, words suffer amnesia in the same way as images do. And the screens where the perverted use of words takes place are almost the same screens for the images: newspapers, films, shop windows, billboards, etc. Suárez's conclusion is quite pessimistic at this point:

> Hence the most forthright proposal of USA, recharging language with critical and political effect, is confined to the subjective realm of the "Camera Eye" interludes. Exiled into interior speech, it remains a utopian memory seemingly unrealizable in the public idiom of the "Newsreels" or the popular one of the character accounts.[69]

If U.S.A. trilogy constitutes a screen (in the abstract sense of "screen"), a point of encounter (and a mark of its limits, a frontier) of Dos Passos's objectivity and subjectivity concerning the project of recharging the language of the American speeches, I hope I have proved that we cannot understand it without taking into account: 1) the networked structure of its message; 2) the absence of a "message" (a fixed message), for any possible message has to be related to an active reader able to participate in the complex "four conveyor system" device and engaged with the implicit experience of memory required by the work; 3) the active reader required by the work: a cognitive-multisensory reader, able to manage a large range of facts, characters (in the absence of over-explanations or moral evaluation) and also free associations, but especially a visual, aural, olfactory, and gustatory competent reader, no less than a *multi-media* (newspapers, radio, cinema, songs, publicity) competent reader, and all that in a genuinely literary work. U.S.A. trilogy is not just a pioneer text. No doubt, the modernity of such a text is of a higher rank than most series, videogames, and cyberart works that we currently consume on a daily basis.

El Lissitzky's Screening Rooms[1]

Olivia Crough

Fig. 1: Room for Constructivist Art, International Art Exhibition, Dresden, 1926. The Getty Research Institute, Los Angeles (950076). © 2015 Artists Rights Society (ARS), New York.

In his 1925 essay "K. [Kunst] und Pangeometrie," El Lissitzky wrote: "We are standing now at a period in which A. [art] is on the one hand degenerating into

a pastiche embracing all the monuments in the museums, and on the other hand is fighting to create a new expression of space."[2] Trained as an architect, Lissitzky worked out this concern with the expression of space across and between arts: painting, drawing, assemblage, photomontage, theater, typography, and exhibition design. However, despite his considerable work in photography and photomontage, he engaged little with one of the most popular new media forms of the interwar avant-gardes: cinema. While he praised Viking Eggeling's abstract "absolute" films for using the medium "as a means of solving the problems of dynamic F. [form (*Gestalt*)] through actual movement," he criticized film for ultimately being "only a dematerialized surface projection."[3] Cinematic projection indeed reduced three-dimensional space onto a two-dimensional plane; and Lissitzky had already resolutely moved in the reverse direction in his *Proun* constructions, made of paint, wood, sandpaper, metal foil, and other materials, which he called the "interway station from painting to architecture."[4] His 1923 *Prounenraum* further extended the Prouns into architectural space, to cover three walls, corners, and the ceiling of a room at the 1923 Grosse Berliner Kunstausstellung.[5] Given this trajectory, how, in 1925, could cinema figure into the Constructivist "new expression of space" advanced by Lissitzky?

The role of cinema in Lissitzky's artistic practice – and in particular the potential relationship between cinema and a "new expression of space" – remains undertheorized to this day, partly because of his overt criticism, and because he made no films as such.[6] He did, however, work on a cinema. One year prior to "K. und Pangeometrie," while recovering from tuberculosis in Switzerland, Lissitzky wrote to Sophie Küppers (his future wife): "Am working a bit on my cinema, unfortunately it's very awkward coping with compasses when you are lying down [...]. The next thing is my cinema (this will be dedicated to Lenin and will be called 'The Lenin Building'). That is a work that will take a few years."[7] Lissitzky-Küppers succinctly notes that the project "overtaxed his strength" and "the splendid idea had to be abandoned."[8] With no further record of Lissitzky's cinema, we can only conjecture about his approach to the architecture of screening and projection.[9] Nevertheless, as my discussion endeavors, I believe the question of the relation between architecture and cinema in Lissitzky's work holds considerable promise, notably in relation to the intriguing example of two of his *Demonstrationsräume*, or "Demonstration Rooms."[10] Designed by Lissitzky and built in 1926 and 1927 at the Dresden Internationale Kunstausstellung and the Hannover Landesmuseum, these exhibition rooms displayed works by an international cohort of avant-garde artists including László Moholy-Nagy, Pablo Picasso, Francis Picabia, Alexander Archipenko, Noam Gabo, Willi Baumeister, Oskar Schlemmer, and Piet Mondrian. As Maria Gough has illustrated in her essay "Constructivism Disoriented," the rooms intertwined theater, architecture, and cinema into a dynamic exhibition of painting, sculpture, and prints – not as a singular installation or *Gesamtkunstwerk* but a novel means of *Demonstration*, intended by Lissitzky

to operate as a modular, standard exhibition model.[11] By looking in depth at these remarkable exhibition spaces, alongside Lissitzky's writings, I outline an approach to address the caesura of cinema in scholarship on Lissitzky's multi- and trans-medial practice in the 1920s. By working with the concepts of an "ex-panded cinema" and "cinema by other means," I find elements of cinema over-pouring the boundaries of a singular definition of the cinematic.[12] My approach is also informed by media archaeology in that I look for elements, material and metaphoric, of the medium outside of its traditional location (the cinema) and histories. Drawing from such work, I use "screening" as a critical concept for reading multi-media practice and attending to Lissitzky's rich and problematic relation to cinema. Giuliana Bruno has theorized the screen as a threshold, a medium (an *in-between*) of material and medial/aesthetic encounters.[13] Following Bruno's approach, I furthermore read exhibition design as medium in both senses – as an art and as a form of mediation *between* arts – and offer an analysis of a particularly striking example of modernist intermediality through exhibition.

To begin, I will draw out Lissitzky's critique of cinema in two ways, which centered around its qualities of *dematerialization* and *illusion of three-dimensional space*. For Lissitzky projection loses, in addition to three-dimensional space, the haptic and textural qualities to which he carefully attended in his practice across media. We can contrast his self-portrait as an artist-engineer, hand extending from his head to grasp a compass, with his portrait of filmmaker Dziga Vertov as the optical artist, the "kino-eye."[14] According to Lissitzky, film merely exploits a "limited" property of our visual capacity: "disconnected movements separated by periods shorter than one thirtieth of a second create the impression of a con-tinuous movement."[15] He proposes instead an art based on continuous move-ment and vibration of material bodies: "When it [this body] is motionless it forms a unit in our three-dimensional space, and when set in motion it generates an entirely new object [...] a *new expression of space* which is there as long as the movement lasts [...]."[16] He was likely aware of, and may have been referring to, contemporary works such as Duchamp's *Rotary Demisphere (Precision Optics)* (1923) and Moholy-Nagy's *Light Prop for an Electric Stage (Light Space Modulator)* (1922-1930), both of which used rotating disks to create sculptural studies of move-ment and light without the use of film.[17]

On the other hand, Lissitzky critiqued cinema's illusion of three-dimensional space. In his text on the *Prounenraum*, originally published in the first issue of the Berlin journal *G: Material zur elementaren Gestaltung* in 1923,[18] he sets forth his re-definition of exhibition space:

> The new room neither needs nor desires pictures – it is not in fact a picture if it is transposed onto flat surfaces. This explains the hostility of the picture-painters toward us: we are destroying the wall as a resting-place for their pictures. When the desire is to obtain the illusion of life within an enclosed

space, then this is how I will do it: I hang a piece of glass on the wall; it has no painting behind it, but a periscopic device which shows me what is happening at any given moment, in the true color and with the real movement.[19]

Lissitzky's critique of naturalistic, perspectival space and the "picture-painters" who create is tied to his combination of Suprematist and Constructivist theory, but particularly with Constructivism's advancement of materials and construction over composition and representation.[20] What makes this passage particularly interesting is his rather disparaging suggestion of a periscopic projection apparatus: if illusion is what people seek, he will turn the wall into a device that falls somewhere between a live-feed color television screen and a camera obscura – combined with an inverted periscope from the trenches. As transparent glass replaces and optically dematerializes the opaque wooden wall, it also becomes a moving-image screen. This invocation of the cinematic as merely a replacement for traditional representation speaks to his limited view of cinema's potential for art, compared to many of his contemporaries.[21] Recall that Lissitzky praised Viking Eggeling's work. Eggeling's films such as Symphonie diagonale (1924) and Hans Richter's Rhythmus 21 (1923), Rhythmus 23 (1923), and Rhythmus 25 (1925), which Lissitzky likely also saw, were made entirely by stop-motion animation of abstract, primarily geometric shapes animated against a black background. While using the medium to explore relations between rhythm, form, and movement, they remain within the domain of the circumscribed page or canvas, utilizing drawings (Richter) and cut-outs (Eggeling).

To return to Lissitzky's discussion of a "new expression of space" in "K. und Pangeometrie," he gives the example of "a glowing coal [which] while moving leaves the impression of a luminous line."[22] On the one hand, this spoke to early 20th-century cyclographic photography studies in psychotechnics and the choreography of labor, from Frank and Lillian Gilbreth's motion studies of small arms production in the United States, to Soviet neurophysiologist Nikolai Bernstein's analyses of workers' movements and pedestrian gaits. Produced in a long exposure, the resulting image traced the luminous path of light bulbs affixed to a subject's moving body. Lissitzky's example moreover anticipates post-war practices that isolate the projection of light, such as Anthony McCall's "solid light" films begun in the 1970s. In Line Describing a Cone (1973), projected 16mm film and fog form a three-dimensional cone of light, inverting cinematic viewership by drawing attention away from a projected image and toward the beam of light as constituting an atmospheric, sculptural body. We could also look to Lis Rhodes's 1975 *Light Music*, a work resonating with Richter and Eggeling's "visual music" films, in which spectators moved through a dark environment of projected light and smoke. In a similar gesture, Lissitzky's proposed glowing coal, although containing no actual piece of the cinematic apparatus, produces a "lu-

minous line" through physical motion, dependent on the absence of competing light. Furthermore, its persistence is based not on the illusion of three-dimensional space that Lissitzky critiques, nor on a succession of still frames, but on an illusion shared with the cinema, an afterimage of light.

Thus, we already find within Lissitzky's critique of the medium the start of an opening to bridge a "new expression of space" and cinema. In the mid-1960s American filmmaker Stan VanDerBeek, followed by media theorist Gene Youngblood's 1970 book of the same title, used "expanded cinema" to refer to a body of experimental post-war installation, immersive multi-media environments, video art, light shows, performance, and cybernetic art.[23] McCall's work – and, as I will argue, Lissitzky's – including important works without film projection, such as *Landscape for Fire* (1972) and *Long Film for Ambient Light* (1975), appears in an alternative genealogy of works that explored the limits of the cinematic medium *and* apparatus. By examining Lissitzky's essay and the Demonstration Rooms in these terms, as I will do in the following pages, we expand this genealogy into key modernist works. Pavle Levi has already covered significant ground here by examining avant-garde works from the 1920s and 1930s, "experiments not only with but also 'around' and even without film," such as Man Ray's diagrammatic airbrush painting *Admiration for the Orchestrelle for the Cinematograph* (1919) and Aleksandar Vučo and Dušan Matić's assemblage *Frenzied Marble* (1930).[24] Levi defines "cinema by other means" as "the practice of positing cinema as a system of relations directly inspired by the workings of the film apparatus, but evoked through the material and technological properties of the original nonfilmic media."[25] Levi's analysis rests on a concept of media as Deleuzian *diagrams*, always in a state of becoming and "constituting hundreds of points of emergence or creativity, unexpected conjunctions, of improbable continuums."[26] My argument only differs in that I look at how the cinematic operates in a space beyond authorial intention.

Several scholars have noted cinematic qualities in Lissitzky's work. Levi briefly mentions Lissitzky's multiperspectival *Prouns*, "bioscopic" book *The Story of Two Squares* (1920), and autobiographical sketches, "The Films of El's Life," as part of a "general cinefication" of work in the Russian avant-garde.[27] However, Lissitzky's work does not figure further in his analysis. Lutz Robbers points out that Lissitzky illustrates the *Prounenraum* in *G* as a storyboard of a linear sequence of views, resembling Moholy-Nagy's "film-manuscript" *Dynamik der Gross-Stadt* (1921-1922).[28] Describing Lissitzky's photomontage frieze *Rekord* (1926) (version with two runners), Margarita Tupitsyn aptly observes, "Lissitzky succeeded in infusing his frieze with cinematic qualities through the rendering of high-speed running, a doubling of the city landscape, and the spreading of white vertical stripes across the whole image."[29] She moreover suggests Lissitzky's "surrender to the language of cinema and photography" in 1924 onward was largely a product of his encounter with Malevich's writings on cinema; indeed, that year Lis-

sitzky translated some of Malevich's essays from Russian into German.[30] While this relationship is indeed crucial, to only account for Lissitzky's relation to film by influence of Malevich obscures Lissitzky's remarkable perception, as is my concern, of the very architecture of screening. To this end, Gough subtly points to some cinematic qualities of the Demonstration Rooms, such as the "flicker" produced by the wall design.[31] She also discusses Vertov's visit to the Hannover Abstract Cabinet in 1929, an encounter he described to Lissitzky: "I sat there for a long time, looked around, groped [*oschupyval*]."[32] Gough interprets the film-maker's blindness, his senses reduced to an almost obscene, tactical *groping* of the space, as the disorientation experienced by the spectator and "attention to the contingency of his or her corporealization."[33] My aim here is to further push on the matter of the cinematic as it operates materially, spatially, and architecturally.

In 1926, just one year after publishing "K. und Pangeometrie," Lissitzky designed and built the *Raum für Konstruktive Kunst* (Room for Constructivist Art) at the Dresden Internationale Kunstausstellung, followed in 1927 by the *Kabinett der Abstrakten* (Abstract Cabinet)[34] at the Hannover Landesmuseum.[35] Although we should not view these projects as a direct application of his essay, they figure as an approach to the anti-monumental, "new expression of space" he calls for. He received the commission for the Dresden *Raum* from director Hans Posse and architect Heinrich Tessenow, who turned the Städischer Ausstellungs-Palast into a temporary summer exhibition as a collection of 56 sparse, neutral gray galleries surveying contemporary art from Europe, the Soviet Union, Japan, and the United States. Unlike most of his exhibition commissions, Lissitzky did not officially represent the Soviet Union, and had considerable autonomy over the design. He wrote to Sophie Küppers, who had helped secure the commission from Tessenow:

> Posse writes and encloses a ground plan of the room which is placed at my disposal (6x6 meters). So it's not the hall of modern painting, it's a space [*ein Raum*] without specific function, with which I can do what I like? Yes, I must keep racking my brains, for it must (as you write) be art.[36]

It was the only gallery not organized by nation, and the only to show primarily abstract work. The art historian and Hannover Landesmuseum director, Alexander Dorner, commissioned the second Demonstration Room after visiting the Dresden exhibition. The *Kabinett* would be designed as a permanent exhibition room to hold primarily abstract works.

Lissitzky referred to both exhibition spaces as "Demonstration Rooms" and envisaged them as prototypes, which would "present a standard [*Standard*][37] for spaces in which new art is shown to the public."[38] They would replace typical crowded, carpeted salon-style exhibition rooms, which he compared to a "a zoo, where the visitors are roared at by a thousand beasts at the same time."[39] He first

used the term for the 1923 *Prounenraum*[40] but did not use it to refer to his other exhibitions from the 1920s, such as the well-known Soviet pavilion at the Internationale Presse-Ausstellung (Cologne, 1928). Some have translated the German *Demonstration* into "exhibition," using it as a synonym for *Ausstellung*. However, this overlooks the meaning of *Demonstration* as not only to exhibit but also to demonstrate a particular vision of art. Moreover, as Gough explains, *Demonstration* was "at once broader but also more specific than *Ausstellung*: broader in that it meant political protest; more specific in that it also denoted the making – the unfolding – of an explanation or reasoned argument; yet more specific in that it signified, furthermore, projection (such as, for example, slide projection)."[41]

Despite the provocative implication of slide projection, neither room contained projection equipment, nor film or photographs. Nevertheless, we should bear in mind how *Demonstration*, as distinct from *Ausstellung*, implies temporal and spatial processes of unfolding and transposition. These and other cinematic metaphors consistently permeate Lissitzky's writings surrounding the works. Moreover, his design, while attending to every surface of the room, utilizes walls, curtains, blinds, and screens, and manipulates natural and artificial light, demonstrating cinema without filmic projection. In other words, I locate the Demonstration Rooms within an expanded body of "cinema by other means."

To enter gallery 31 at the Dresden Internationale Kunstausstellung, the visitor had the option of two entranceways, each covered by a pair of sliding grey curtains. Photographs indicate that in the rest of the exhibition, bare entranceways allowed one's gaze to anticipate the following gallery before physically walking through them. Gallery 31's curtains arrested this look, perhaps arousing curiosity or trepidation. Much like contemporary moving image installations in galleries, the entrance curtains regulated the flow of light and sound and imparted a sense of division between one room and the rest of the gallery. They also recalled cinema and theater curtains that both block light and move to conceal or reveal the screen or stage. Having parted the fabric, visitors entered a wholly different kind of space. Stepping into the boxy room of roughly 6 x 6 square meters, they would first see Naum Gabo's sculpture *Model for "Rotating Fountain"* (1925), resting on a pedestal at the room's center. Designed on the principle of kinetic rhythm, the open frame and transparent plastic of Gabo's work denied solid sculptural mass by which to orient one's body.

Further ungrounding the spectator, the walls would have appeared to shift, "flicker," and bend as they moved. This effect emerged from the modular lathe system Lissitzky installed across each grey wall. Placed at 7-cm intervals and reaching from floor to ceiling, the wooden modular lathes completely upset Posse and Tessenow's design of the walls as a neutral, uniform support for pictures. By painting the left sides of the lathes white and the right sides black on a gray background wall, he produced a kinetic grayscale spanning the four walls. Photographs from the Hannover exhibition demonstrate how the same

picture – Lissitzky's *Floating Volume* (1919) – appears from different angles as the supporting wall changes between white, gray, and black. Lissitzky described the effect as an "optical dynamic [*optische Dynamik*] [that] is generated as a consequence of the human stride."[42] As Gough writes, "The flicker destroys the spatial coordinates that would otherwise afford equilibrium."[43] As I explain later, some critics turned to metaphors of fluidity to explain the unfamiliar phenomenological effect. We can further imagine that the wooden lathes – Lissitzky would switch to Nirosta steel for the Hannover room – produced a heightened tactile contrast with the pleated folds of the curtains.

Hung unframed on the unstable optical ground, the paintings and drawings entered into a parergonal play that revealed and affirmed the spectator's encounter of a work of art as never stable, but always immanent, perpetually unfolding through bodily motion. Anticipating postwar practices including Minimalism, installation, and performance, the walls of the Dresden Demonstration Room affirmed the contingency of a work's appearance, always arising from the spectator's aleatory physical position *and* motion.[44] Lissitzky wrote, "if on previous occasions in his march-past in front of the picture walls, he was lulled into a certain passivity, our design [*Gestaltung*] should make man active."[45] This activation and "disorientation" of the spectator, as Gough has astutely theorized, worked through a logic of endless differentiation of the art work: activation through disorientation and disorientation through activation. In this way, Lissitzky found a way to challenge monumentality in favor of dynamism.[46] As one critic later commented, "There is no suggestion of the absolute and eternal."[47] Benjamin H.D. Buchloh places the Demonstration Rooms in the framework of modernism's "crisis of audience relationships": the spectator enters a "phenomenological exercise that defies traditional contemplative behavior in front of the work of art."[48] What is more, Lissitzky designed the Dresden Room without knowing which artworks it would contain. It is therefore essential to view the Demonstration Room "[as] a site of substitution and exchange," rather than a completed, fixed installation or total work of art.[49] In other words, Lissitzky did not design the room for a set of particular art works, but as a fluid space in which art works could be rearranged or removed, and the room itself would be reproduced in new forms.
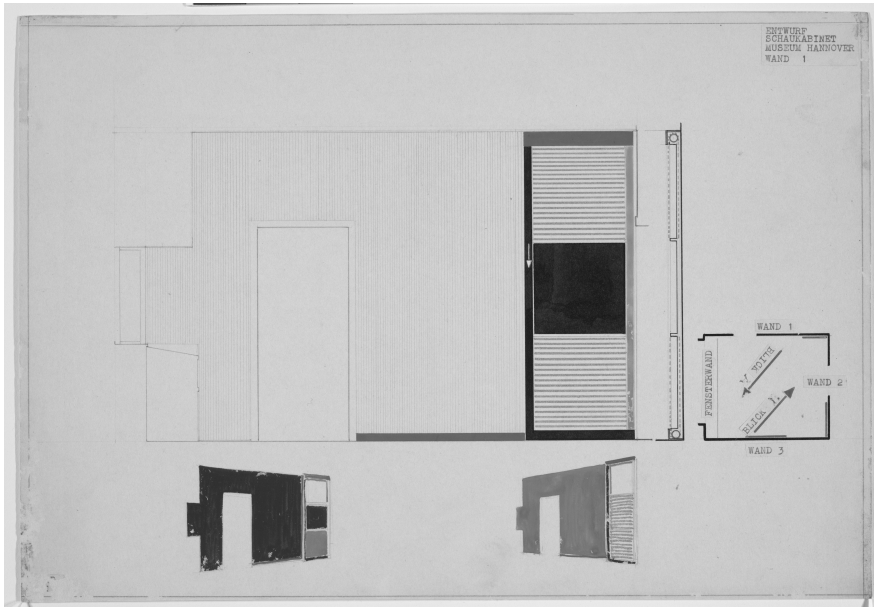
Fig. 2: El Lissitzy, design for Exhibition Room in the Hannover Museum, 1926. Graphite, gouache, metallic paint, black and red ink, and typewritten labels. 24.9 x 36.2 cm. Harvard Art Museums/Busch-Reisinger Museum, Gift of Lydia Dorner in memory of Dr. Alexander Dorner, BR61.39.A. © 2015 Artists Rights Society (ARS), New York/VG Bild-Kunst, Bonn. Photo: Imaging Department © Presidents and Fellows of Harvard College.

In the room's corners, Lissitzky installed four two-tier steel display cases reaching from floor to ceiling, creating a break in the lathes. Each tier held one print or painting. Fastened onto runners, a perforated screen of sheet metal – which recalls the perforated metal sections of Moholy-Nagy's *Light Prop* – could be slid up and down by the visitor to cover one of the art works and "regulate visibility"[50] (see Fig. 2). In archival photographs of the show, the screened painting remains somewhat visible, but also animated and seductive: indeed, Lissitzky described how the picture would "shimmer through" (*Durchschimmern*).[51] Lissitzky-Küppers recalled, "The viewer's eye did not tire, because not all the pictures were visible at the same time, but mere glimmers of them appeared intermittently behind the metal screens which partially concealed them."[52] One could consider this work within the domain of participatory art, but at the risk of suggesting that the visitor's action amounts to a kind of mastery over the space.[53] Rather, "screening" becomes an action performed mutually by design and visitor, a means of activation and differentiation, seduction, and play. Lissitzky suggests this screening function himself: "the open-pattern masking surfaces [*Deck-*

flächen] are pushed up or down by the spectator, who discovers new pictures, or *screens* [*verdeckt*] what does not interest him. He is physically compelled to come to terms with the exhibited objects."[54] The perforated metal also literally "screened out" Picabia's collaged Dada-ist portrait of Raymond Poincaré: Lissitzky-Küppers wrote that when members of foreign consulates visited the room, "we were asked to hide the portrait behind the movable metal screen [*Metallschirm*]."[55] In Hannover, Lissitzky again used the display cases but decreased the number to three while increasing the tiers to three, and added a "rolling Venetian blind" on the fourth wall.[56] Gough notes how the shift from two to three tiers turned an architectural motif (a sash window) into a cinematic one (a film strip).[57] Curiously, Lissitzky replaced the perforated metal screen with an opaque metal sheet that in effect always blackened, or canceled out one of the art works.

Beyond the remarkable lathe system and display cases, Lissitzky's design encompassed every surface of the room and incorporated stretched textiles, curtains, venetian blinds, and lighting systems utilizing both natural and artificial light. He describes designing the rooms in terms of "creating the rhythm of the whole," demonstrating a spatial and environmental concern that emphasized relations between parts over and above the art works on display.[58] Above all, light could mediate the material elements and shape perception. For example, he repeatedly emphasizes the need to "regulate" the light because of its effect on paintings' color. "Just as the best acoustics are created for the concert-hall, so must the best optics be created [...]."[59] In the Hannover *Kabinett* natural light entered through a window spanning nearly the whole wall: "My aim was to transform the window area into a tectonic lighting-agent, which would let in only the amount of light that was necessary."[60] Indeed, his description of the design is frequently highly cinematic, emphasizing the relationships between light and color above representation or exhibition content. He writes about the Dresden *Raum* in correspondence with Küppers:

> I am thinking of having the daylight stream in through moving colored filters; so that the impression produced by the pictures also changes at intervals. For this purpose it would be a good thing to create artificial lighting for the room in the evening. After all we have more time in the evenings, and modern painting under electric light can produce a powerful impact with its color spectrum.[61]

Like the passage of film frames through a projector, the moving colored filters would have regulated light in intervals, rendering temporal the experience of viewing the exhibited artwork. The membrane of each work – and the skin and clothing of each visitor – thus becomes a surface to receive the impressions of light: a screen, experienced in duration. Decades before McCall's *Long Film for Ambient Light* (1973), the space would have drawn attention to the interior impres-

sion caused by a duration of exterior, natural light, thus performing a reduction of cinema to an architectural relation of light and time.[62] The colored filters would have formed a projector outside of the filmic apparatus, casting exterior light into the dark room. Unfortunately, the space contained no windows for daylight and thus Lissitzky never built these colored filters. Alongside the lathe walls, the colored filters further "differentiated" each instance of viewing the work and allowed visitors to explore the play of colored light, art works, and the surface of their own bodies. They also would have formed a fascinating dialogue with the dynamic colored screens in Kurt Schwerdtfeger and Ludwig Hirschfeld-Mack's *Reflektorische Lichtspiele* (1922-1923) at the Bauhaus, which Lissitzky could have seen when he, according to Walter Gropius, visited Weimar in the summer of 1923.[63]

In place of colored filters in the Dresden *Raum*, Lissitzky altered the existing artificial overhead lighting by stretching unbleached linen over the ceiling to create a diffused "skylight" (*Oberlicht*).[64] He dyed the fabric's edges to effect the light's tone: "I have colored this along one frontal wall with blue, along the other with yellow, so that one is coldly illuminated and the other warmly illuminated [*beleuchtet*]."[65] This cloth served as a scrim, a tensile fabric that becomes translucent when backlit: a material used in theater and film to filter and soften natural or artificial light. This light surface becomes a screen through which exterior light projects into the dark room, illuminating both art works and visitors' bodies. The German *Schirm* – the term used by Sophie Lissitzky-Küppers to refer to the movable metal screen – has nearly the same meaning as *scrim*: a spanned textile, blind, or curtain, but also a cinema screen. Similarly, *Leinwand*, from *Leinen* (linen), also means canvas or screen. Giuliana Bruno argues that the contemporary screen is "conceptually closer to a canvas, a sheet, a shade, or a drape" than the common metaphors of a window or mirror.[66] Although describing postwar and contemporary works by artists such as Robert Irwin and Krzysztof Wodiczko, her analysis of the screen speaks beautifully to the Demonstration Rooms. Her theorization of the screen as a medium (*in-between*) of material, medial and aesthetic encounters prompts us to look beyond the conception of the screen as an immaterial or neutral, receptive surface. Screens are often "tensile and textured" surfaces, folded and permeable.[67] "Walking through the art gallery and the museum, we encounter webs of cinematic situations, reimagined as if collected together and recollected on a screen that is now a wall, a partition, a veil, or even a curtain."[68] In this sense, Lissitzky's tensile surfaces literally screen light but also intimate the material and historical affinity of canvas, screen, and cloth in cinematic genealogies.

If "K. und Pangeometrie" anticipates a sculptural cinema without a screen, the Demonstration Rooms attend to the screen and projection and regulation of light without film projection. In their diverse "media archaeological" approaches, scholars including Giuliana Bruno, Erkki Huhtamo, and Marina Warner have

argued for a study of the screen that attends to fabric, canvas, clouds, walls, and other architectural and cultural forms across and between media.[69] Huhtamo has proposed a "screenology" or "archaeology of the screen" as a new branch of media studies that would draw on the etymology of "screen" (*écran*, *Leinwand*, and so forth) and expand genealogies of the screen to forms prior to and beyond cinema, television, and computer screens. Like most media archaeological work, a central motivation is to open media studies beyond teleological trajectories and a "cult of the new," to examine "processes of their becoming" and forgotten departures.[70] Among Huhtamo's finds are screens partitioning interior space and screening sight, heat, and wind, but also shadow theaters and panoramas. According to Huhtamo, these and other surfaces such as wallpaper and 19th century lithophanes are all examples of projection-less proto-screens with complex relationships to architecture and design.[71] The "focus should not only be on screens as designed artifacts, but also on their uses, their *intermedial relations* with other cultural forms, and on their discourses that have enveloped them in different times and places."[72]

Of course, merely describing Lissitzky's work as "cinematic" or "filmic" is reductionist and risks obscuring the intimate, vital entanglement of architecture, theater, and design within the exhibition space and the artist's theories. However, by working with a concept of an expanded cinema, prior to its coinage in 1970, we find elements of cinema expanding into other media and configurations. To borrow expressions from George Baker and Pavle Levi, Lissitzky's Demonstration Rooms are *both* cinema "beyond its limits" and "by other means."[73] Like McCall's *Long Film for Ambient Light* and other works, such as Man Ray's *Admiration of the Orchestrelle for the Cinematograph*, the operation is an "expansion of film into entirely other forms."[74] Crucially, we have not found Lissitzky's missing entrance into filmmaking and away from other media, but located a work that subtly demonstrates medium multiplicity at the porous limits of cinema. In demonstrating a new expression of space through exhibition design, the rooms also demonstrate an unexpected cinematic operation. While he opposed the "pure opticality" and "dematerialization" of filmic projection, Lissitzky's designs tangibly and architecturally engage forms of pre or extra-cinematic screening processes. His work from the mid 1920s almost performs media archaeology by recalling the cinematic medium's past prior to 1895, a past encompassing magic lantern shows, illuminated tensile fabrics, and interior design. The rooms demonstrate "screening" as an action and process, both a regulation of light and a means for the activated subject to engage with the art object. It is in this sense that I propose "Screening Rooms" as another term for Lissitzky's Demonstration Rooms. Here, "screening" builds an architectural conception of relations between arts, and between art and an "activated" subject.

Working through this lens of "expanded" or "other" cinema and media archaeology offers an alternative to a common historical reading of the rooms as

OLIVIA CROUGH

a "dematerialized" space. After visiting the Abstract Cabinet, modern architecture historian Sigfried Giedion described a "fluid atmosphere" and praised how the lathes "dematerialize the wall to the point where it seems to dissolve completely."[75] Alexander Dorner similarly wrote that the lathes set the room "floating" (*schwimmend*) in free space.[76] More problematically, Dorner later subjected the room to his museological model of *Stimmungsraum* or "atmosphere room," built on Aloïs Riegl's *Kunstwollen*, which called for a correlation between exhibition design and the art works of a historical period. As Noam Elcott explains, to Dorner the *Kabinett* created an atmosphere of dematerialization, mobility, and transparency that corresponded to the "massless tension" and multi-perspectival space of modernist abstraction – and most of all, cinema.[77] Dorner expected that cinema would logically supersede painting: "The self changing character of Abstract art pushed it in the direction of the MOTION PICTURE [...]."[78] This conception of the cinematic as purely optical and immaterial is of course at the center of Lissitzky's critique of the medium. Thus, by looking for cinema beyond the common trope of dematerialization, associated with immaterial screens, intangible projection, or smoke and mirrors, we find material reconfigurations and reverberations of screening architecture in new sites.

In his study of the relationship between Mies van der Rohe's architecture and cinema, Lutz Robbers draws a distinction between two conceptions of cinema and architecture: "on the one hand, an architecture that both mimics and supports the cinematographic apparatus' phantasmagorical ability to affect the audience; on the other hand, architecture that through the interaction of materials, forms, light and perception sets in motion an "interplay" of movements and bodies."[79] It is within the latter conception that, alongside Mies, Lissitzky's work fits. As he re-fashioned the predominant models of art exhibition, perhaps Lissitzky drew upon his unfinished design of a cinema – consciously or not. Although he made no films, the architecture of the cinema – deconstructed and reconfigured as the regulated movement of light and tangible screen surfaces – provided means to resist qualities of monumentality and fixity in other mediums, *and* the exhibition space. If the *Prounenraum* formed an "interway station" between painting and architecture, the Dresden and Hannover Demonstration Rooms create interway stations between exhibition architecture and the cinema. They flicker between White Cube and Black Box, uncontained by either model, nor by an aesthetic of rigid medium specificity.[80]

But Who Actually Watched Mark Lewis's Films at the Louvre?[1]

Raymond Bellour

The four films created by Mark Lewis for his work *Invention au Louvre*[2] are projected in a room that is not really a room, as this beautiful rectangular space is also a thoroughfare leading to an elevator from which visitors come and go. It is adjacent to the wide and endless corridor along which are displayed the monumental elements that allow visitors to imagine the building of the Louvre from the 15th century, thanks to a reconstruction that is underlined by the light shed on it by Joseph Kosuth's contemporary art piece *Neither Appearance nor Illusion*, an installation comprising of discontinuous sentences whose immense sparkling letters are displayed on the upper part of the walls, along with architectural reconstructions of the Louvre.

It was by chance that, one day in December 2014, when I first saw these films by Mark Lewis in the "Salle de la Maquette," I had planned to meet some foreign friends there, forgetting the maddening queue that visitors now have to go face if they are not lucky enough to have advance tickets or member's passes. I had to wait for them a long time, taking this opportunity to watch repeatedly, until they arrived and then with them, the four films dedicated by Mark Lewis to four spaces of the Louvre and showing both the spaces themselves and the many artworks, paintings, and sculptures exhibited in them.

Mark Lewis has made many films (89 to date since 1995, if we are to believe his website) and despite the extreme variety of objects and situations chosen by him, what they all have in common is that they subscribe to a point of view about the moving image similar to what Henri Michaux called for in painting in his 1945 provocative text "Combat contre l'espace."[3] Which meant, for Michaux, a fight against all the metamorphoses of perspective that, like an inner demon, continuously innervates and devours painting. Adopting, in terms of the material body of the image itself, unlike other experimental artists, a perfectly conventional point of view based on a beautiful and often high definition of photographic or digital images. Mark Lewis's films voluntarily disrupt their perceptual order through two main approaches, both related to the obstinate continuity of filming (one must add to this the corrosive disruption of the editing phase in the rare – and older – works, in which he seems to adopt a narrative perspective to ruin it even

more): on the one hand, the intangible fixity of the shot within which the elements of reality keep appearing until reaching a kind of exhaustion; on the other, essentially and increasingly, more or less chimerical camera movements whose formalizing power has been dramatically increased, to the point of becoming improbable, through the use of both new visual devices and the illusionist virtues of digital processing.

The paradox of these shots that succeed each other, like wisps of smoke driven by an automatic energy, is that they require an attention that struggles to understand the interest of the motifs that endlessly appear, submitted to the gentle action of a movement with no apparent determination. Such attention requires perception to fix itself on what it keeps seeing if the aim is not to miss any of it. In a beautiful tribute to James Benning, musician Michael Pisaro explained how, when watching his long – but imperceptibly animated – fixed shots, one could go so far as to prevent oneself to blink for fear of missing a subtle transformation occurring unexpectedly in parts of the image.[4] Referring to experimental music, he emphasized the unusual calm that then descends on the mind. So that "by means of duration, each work, he finally added, creates its own definite kind of stillness."[5]

But Mark Lewis's films are quite different, as it is the movement of the body as such and the patiently traveled distance, that, ideally, require similar attention. Unlike Benning's films, intended for theatrical release, which favors the concentration of the spectator, Mark Lewis's films are mainly displayed in galleries and museums, in which a variable level of distraction is usually the norm. But even when accepting the hypothesis of an attentive visitor, this attention immediately seems more threatened in front of his films than in front of those of the Californian filmmaker, whose continuity remains anchored in a sound world that gives them a certain level of reality, since the perfect silence in which they are immersed significantly increases the physical sensation one has when feeling divided between the perception of the movement itself and that of the motifs that it constantly reveals. For the viewer, it results in a kind of mental intermittence, difficult to describe, oscillating between moments of extreme concentration and moments of unavoidable distraction that is immediately corrected to give oneself the misleading assurance that nothing has been missed. Such an impression increases when the movement of the camera, just after the beginning of In Search of the Blessed Ranieri for example, suddenly starts to show – in a quite improbable way – the upper part of the museum, where one can hardly imagine that a real camera can reach. Knowing that this shot was made, not by actual filming but thanks to thousands of digital photographs assembled by computer to produce a virtual movement, does not really help, as all these stubbornly continued movements already seem virtual through the exponential use of the Steadicam. It is rather the physical confusion offered to the eye that surprises and attracts. A similar effect is obtained, in another way, in The Night

Gallery, filmed among a wealth of ancient statues, where the intermittent variations of light and shade accompanying the movement that seems to animate them, develop around these motionless bodies a perceptive beat that submits the gaze even more to its conditions of possibility.

This is where, captivated as I was by these flexible and immovable trajectories that revealed to me, without seeming to, so many nuances, shades, and motifs through so many known, unknown, or forgotten paintings, I finally asked myself who had actually watched Mark Lewis's films at the Louvre. Starting with me, it seemed the conditions of projection might have been too adverse to the sustained effort required from the viewer willing to watch them: viewers were invited to sit on one of three benches facing the screen on which the films were projected one after the other, only separated by a black frame, as if to further accentuate the illusion of a single movement whose phases were listed on a display placed at the entrance to the room, which also provided the titles of the films, thus making them recognizable. The image offered to the viewers was indeed not as sharp as it could have been due to the large open curtain letting in the light coming from the large corridor housing the reconstructions of the buildings of the Louvre. On top of which, there was the close proximity of the mock screening room that hosted the projection of Kosuth's cryptic unfinished sentence with its twinkling letters ("*Le mur entre dans le champ du visible jusqu'à l'endroit où une maquette d'ensemble du palais est posée. Une première réflexion, puis un*"). Thus, leaving the flow of more or less noisy visitors walking along the vast corridor, occasional visitors poked their heads in or actually came in, sometimes sitting on one of the benches, probably to persuade themselves that they would see images.

"This is not a film for children!" warns a voice outside, shortly before a museum attendant, coming from the elevator, crosses the whole room, loudly clip-clopping on the floor with her big heels. A little later, a whole group of mothers with their strollers, loudly babbling in the dark as if crossing the concourse of a train station. Later, three men came in and sat next to me; I remember that, of all the visitors who came in during the two hours I was there that day in December in front of Mark Lewis's films, it is them who stayed the longest, a few long minutes, talking to each other, one of them whistling, the other playing with his iPhone. I stopped taking note then, trying, while surrounded by my vigilant friends who had finally arrived and who started watching all the films along with me, to fight against all the combined forces that deterred me to actually watch Mark Lewis's films.

Three months later, I arrived in the screening room again, right in the middle of Pyramid in which, filming the ground beneath the Pyramid of the Louvre, Mark Lewis uses a 180° inverted image effect he had already used when revisiting, in his own way, in 1997 in Upside Down Touch of Evil, the famous sequence shot during the opening scene of Orson Welles's film – museum visi-

tors also being shown walking upside down, doubled by their shadows, across the open space leading to the exhibition rooms.

It is 2:10 pm. I am sitting on the front bench beside an attentive woman. A group of people comes in, one of them says: "It's a projection," and all leave. A family of three arrives, the daughter sits with one buttock on the bench to my left, the parents look as if they have been stopped in their tracks, ready to escape, she gets up almost immediately, they move away. 2:15 pm. An old man comes in, sits and leaves immediately. The woman sitting to my right asks me if there are several films following each other. I answer her question. She goes out to have a look at the display outside and comes back, relieved to know where she is at in what she's watching. We are alone. A couple enters; they sit behind us, speaking loudly. Two strollers arrive from the back of the room. A Japanese visitor comes in, stares at the screen, turns round twice and then leaves. Someone comes up, stops, takes a photo with his iPad and leaves. A young woman leans against the entrance door just long enough to catch the long movement revolving around the *Victory of Samothrace*. Still chatting, the couple gets up and leaves. 2:25 pm. My faithful screening companion abandons me. A horde of people comes from behind and leaves while, in the huge room, a crowd of visitors are attracted by the artworks. Then others tumble through the open door, while a guide accompanying a group points toward us to underline the details to take note of in a painting. I try to imagine what goes on in the heads of these people who may have come to the Louvre to see paintings and who seem so little interested in seeing themselves see, in feeling, in the relentless nature of the movement that takes place on the screen, an exalted sign of the substantial change that would seize them if they accepted to expose themselves to the differences of art through time. I am alone in front of *La Grande Odalisque* by Ingres. I would prefer, like Cézanne, a Venus by Titian, but no matter. What a blessed solitude, despite the sound and light in the distance. Someone comes through the door just long enough to take a picture, his camera caressing a painting; he takes out some biscuits, noise of crumpled paper, talks to a friend who just came in, then they both disappear. A woman sitting behind me wants to get up, her husband stops her, she frees herself from his grasp and leaves, he joins her immediately. A couple arrives, leaves, the woman's high heels make a lot of noise. I stop taking note, which distracts me even more from watching the films than the paradoxical difficulty I have of watching them if I try to ignore everything around me.

In a remarkable study, Élie During tried to suggestively identify the terms relating to a new vision of cinema that, according to him, Mark Lewis's films seem to express.[6] No longer just a movement-image and/or a time-image; but beyond Deleuze's crystal-image, *a volume-image* (to name but a few of the most striking phrases: "a volume-image for a formal time frame"; "the volume itself of the image as an image"; "vision without a point of view, overview with no over-

hanging"; "indecisive time for an indecisive gaze"; "the hologrammatic image, which is the other name of the volume-image"; "something like a formal time detached from the movements of the world and from life itself").[7]

One may find the last of these assumptions a bit exaggerated as it too bluntly separates many of Mark Lewis's films from their obvious content, which remains active despite the abstraction process that impacts them: such a vast choice of motifs indeed implies social, political, historical, and anthropological dimensions. But at the insistence and seriousness of the terms suggested by During, one must above all ask oneself whether such films can still be called cinema, or whether they embody another type of cinema to such a point that it becomes difficult to use the same word to describe such different effects. These effects differ depending on the two main types of shots used over time by Mark Lewis. In the case of prolonged static shots, it is the dilution of the gaze that is at stake, its scattering when watching a hardly labile succession of micro-events with no real distinction: through large windows relentlessly shot from an acute angle, the slow and incessant comings and goings of planes and other vehicles (AIRPORT, 2003, 10′58″); on a patch of land surrounded by neutral buildings, a football game between children and teenagers in the distance, which one can only follow with a distracted eye (TENEMENT YARD, HEYGATE ESTATE, 2002, 4′). Unlike the film of the Lumière brothers, to which Mark Lewis strategically claims to refer to, based on capturing accumulated reality, always more or less surprising and concentrated in a short period of time, in his films, he wipes out reality, focusing on his concept (although it is aimed at showing social reality) more than on the inevitably relativized monitoring of his experience. One must note as well, in another way, following the same still shot technique, the example of the perceptual challenge shown in ESCALATORS AT PINHEIROS (2014, 3′7″), in which the filmed intersecting movements of three crowded escalators and the uninterrupted flow of passers-by moving in the horizontal background challenge any potential consistency in the gaze.

But it is of course the movement, whether forward and/or rotating, that is the major issue here. Take, for example, the surprising CHILDREN'S GAMES, HEYGATE ESTATE (2002, 7′31″), which shows a haunting progression through a small alley that meanders in a tangle of small gardens and buildings, overlooking several streets. The meaning of the title of the work becomes clear thanks to the side shots, always fleeting and distant, taken by the Steadicam, and showing, on the right or left, following its course, children and teenagers once again engaging in various games in this housing estate. The video thus seems to split with a kind of abstract determination between what would be the flashes of the Lumière films documenting their subject, scattered in the margins of the decor, and the pure gaze of the central eye attached to its trajectory.[8] But what is this eye doing, riveted to the image in which pure movement is triumphing? It is distracting itself, so to speak – despite the blinking on which Walter Murch based a kind of

theory to explain his film editing approach but that he also considers as a rhythm, internal to the emotions induced in the viewer[9] (this blinking that we should indeed forbid ourselves doing in order not to miss anything of the vibrating matter of James Benning's shots).[10]

This eye, our eye, is distracting itself in the sense that here it can only absent itself from itself, through variable jolts, to constantly have to return to what it sees; as it is impossible, even if one has the impression of not having taken one's eyes off the screen, for the human gaze to embrace in such a homogeneous and continuous manner the automated vision of a machine that seems to suck up the reality within which it deploys itself. It is these multiple moments of empty stillness that constitute a layer parallel to embodied perception. And this is how these films give the impression of being situated, this has been sufficiently insisted on,[11] somewhere between cinema and photography. But it is in a quite remarkable manner that fixity and movement confront it. Rather than through the increased attention induced by photography, which is free of the scrolling movement of projection that is attached to the time of the video (this is Barthes's main argument in *La Chambre claire*[12]), it is through a singular defection of attentive perception that already generally threatens the projection of moving images in the exposure situation that these films seem carried away by a movement becoming pure time, which does not seem to belong to the time of cinema.

But this, and it is their very strength, is not only due to the gap created between the *dispositif* of the museum and that of cinema, because inside the cinema *dispositif* in which they are sometimes projected,[13] these films show above all the imminence of a space-time that is alien to the one that has defined cinema until now – a form of time that is mixed, layered, laminated, a completely different kind of volume. The strength of Mark Lewis's films, which is largely due to their brevity, accentuating their prototypical nature, makes of each of them a blueprint, projected towards an image extended beyond cinema.

And it was finally on my computer that I felt I had watched all of the four films that make up *Invention au Louvre.* If one can only enter at random the "Salle de la Maquette," one may rather choose specifically from the menu of the display provided at the entrance. Pyramid, as we have seen, uses the recurring stylistic device of inversion Mark Lewis has been fascinated by ever since Upside Down Touch of Evil – for example Rush Hour, Morning and Evening, Cheapside (2005, 4′15″) and One Mile (2013, 9′2″), where a famous London square turns on itself, suspended in the air, its buildings and column diving into the sky. But in Pyramid one can give an additional meaning to this stylistic device: here, it is no longer only an excessive image of the effect that often leaves the viewer rather speechless when watching Mark Lewis's films, but a vision of what happens to the visitor as soon as he enters the museum, leaving his familiar identity behind to virtually become a viewer of paintings, shown upside down

here to express his virtual but possible access, unlike art (which Malraux called *The Metamorphosis of the Gods*).[14]

Likewise, the very gentle movement, sometimes interrupted, that takes us, through THE NIGHT GALLERY, among statues that are alternately lit or left in the shadows, is not only a challenge dedicated to the uncertainties of the gaze, but a way of translating how the gaze never stops, when confronted with the appropriation that is created by an artwork, to freeze and escape – to really fix the gaze and see a particular statue when it is better lit, one sometimes has to do what the computer allows so easily: freeze the image, which almost provides us with the same sense of free eternity that one has when looking at a photograph.

In filming paintings, like in CHILD WITH A SPINNING TOP and IN SEARCH OF THE BLESSED RANIERI, it is, above all, the smooth and endless movement of the camera and its variation of speed that shows us a world that seems, more than most films by Mark Lewis, to be closer to the common cinema experience. In both films, for example, the camera sometimes stops in front of the works for short or long periods of time, especially in the second film. At other times, it constantly goes back and forth between the paintings and those who look at them (thus developing even further the effects of the famous museum photographs of Thomas Struth), both made gentler and intensified by a slight slow motion that allows one to better perceive the movements, gestures, and expressions of the visitors.

Filming paintings has quickly become one of the major challenges of cinema, and understanding the modalities of such filming has also become one of the most critical topics of cinema theory, from Jean-Georges Auriol to André Bazin. As for filming paintings, two approaches seem to illustrate the extreme polarities used to film them: on the one hand, VAN GOGH (1948) by Alain Resnais, an historical reference, in which accumulated movements emphasized by editing seem to literally go through the paintings and thereby "solubilize," so to speak, "the pictorial work into natural perception," inventing "a realism on the second level, from the abstraction of the painting";[15] and, on the other, CÉZANNE (1989) and UNE VISITE AU LOUVRE (2003) by Danièle Huillet and Jean-Marie Straub, where the shots of the paintings do not go beyond their frames, except for a few detailed shots, to show them as well as a cinema image can. The unequal strength of these movies is inseparable from the commentary that accompanies them: a dramatized and somehow outdated voice-over for the first one, and Cézanne's extraordinary words taken from his conversations with Joachim Gasquet in the other two.

But there is at least a third approach one could call a journey through painting, of which Diderot was the main initiator and of which ÉLÉGIE DE LA TRAVERSÉE (2001) by Alexander Sokurov is a perfect example. Following the obscure story of a man who could be the director himself, travelling from Russia, through improbable night images haunted by mist and snow, the camera leads us to the

place where his spiritual quest finally finds its conclusion; the Boijmans Van Beuningen Museum in Rotterdam, where, at length, some of its most famous paintings are filmed: *The Tower of Babel* by Brueghel the Elder, *Poplars near Nuenen* by Vincent Van Gogh, *Saint Mary's Square and Saint Mary's Church* by Pieter Jansz Saenredam, to name but a few. The strange thing is that, pushing the identification of the gaze of this strange visitor to the painted matter to the point of making him wonder, through the inner voice that accompanies the whole movie, "Could it be me who painted this picture?" the matter of the paintings, tightly framed by the close-ups but above all scanned by the loving movements of the camera, is more or less animated by a series of subtle effects (simply described as "visual effects" in the credits) that create tremors and simmers.

But such a film is probably quite different from Mark Lewis's films. His journey through painting nevertheless has a simple appeal that allows gentle attention, as if the visitor was taken by the hand to enter the fictional world in which he passes from one painting to another, stopping for a couple of minutes on his tentative exploration, focusing even more by means of an initial close-up on the central motif of *L'Enfant au toton* by Chardin that one thus discovers gradually. It may be useful to compare this filming to that of Museu d'Arte São Paulo (2014, 5′51″), in which, through a long uniform movement along the walls of the rooms, one can barely see anything of the paintings, immersed in the shadows, their golden frames the only clue that underlines them, until the end where the image slightly lightens up to get closer, as if surprised, while a visitor turns her gaze toward us, to reveal a later version of Chardin's painting. There is also a particular emotion of feeling caught in the flow of visitors becoming more or less attentive viewers of paintings, whether individuals, couples, families, groups with their guides, or pupils with their teachers; one can sense this attention from the intensity of their gazes, their gestures (pointed hands, cameras). The slow continuous movement that carries us through its silence thus loses some of its conceptual impact to become a means among others to introduce us into the intimacy of the painting.

In this sense, *Invention au Louvre* appears as a rare occurrence in the varied but almost uniformly provocative landscape of Mark Lewis's films, to occupy a minor and singular place within the vast panorama of films on painting, through which cinema is constantly questioning what its movement owes to the accumulated time in so many deceivingly still images.

But perhaps I am deluding myself. The impression, which suddenly comes to me, of a common fragile similarity between these films by Mark Lewis and those that usually belong to cinema, may be ultimately due to the common treatment that the computer applies to all images, since it has the incredible privilege to be able to both animate or freeze them, in all their dimensions, endlessly, allowing us to feel and think of them in a different way.

Translated by Nick Cowling and Marie-Noëlle Dumaz

PART V

Dialogues

Gulliver Goes to the Movies: Screen Size, Scale, and Experiential Impact – A Dialogue

Martine Beugnet and Annie van den Oever

From IMAX to standard cinema screens, to post-1990s mid-size HDTV or PCs, to small-size tablets and smartphones, we have become used to watching films on a variety of screens. The different viewing modes implied by the broad range of devices are not interchangeable, they correspond to different spectatorial regimes and habits. Hence, the experience varies greatly depending on the context, but also on the size of the screen, the scale of representation, and the quality of image and sound. In the following dialogue, Martine Beugnet and Annie van den Oever, who have written on, respectively, the effect of miniaturization (the smartphone) and that of gigantism and reduction (cinema and television) on film viewing practices, reflect on some of the changes in viewing experiences and habits raised by the multiplication and the switching between screens of all sizes.

MB: In his media-archaeology approach to screen culture, Erkki Huhtamo describes the evolution of screen scale as a form of "Gulliverization" of the visual.[1] Screens, he points out, have moved away from their initial, anthropomorphic relation to the size of the observer, and have simultaneously developed toward the gigantic and the minuscule. With its city centers and shopping malls hung with massive screens and populated by tiny mobile screen users, urban environments have transformed into (highly commodified and rationalized) "Wonderlands." That the phenomenon should bring to mind Lewis Carroll or Jonathan Swift's writing, indeed, that Huhtamo should devise a term based on the title of the latter's famous fantasy travelogue is interesting in itself. Swift's satirical novel was primarily intended for adults; yet, no doubt because the feelings of inadequacy or insufficiency related to the size of one's body are part and parcel of the experience of being a child and of growing up, shifts in scale are readily associated with fairy tales and children's fiction. Hence, our collective memory of Gulliver's encounter with the Lilliputians and the Brobdingnag giants, which makes the reference immediately graspable, also instantly connects the technologies concerned with both childhood and with the imaginary. To talk of "Gullli-

verization" is, therefore, to take the discussion beyond the merely technical and sociological and to underline the estranging, alienating, and marvelous nature of some of the technological transformations we have been asked to adapt to with increasing speed. It is, in a sense, a first step in the direction of *ostranenie*, the strategy advocated by Viktor Shklovsky as a means to draw attention to the strangeness of an everyday life permeated by new technologies. You have pointed out to me that the first spectator to articulate the experience of "Gulliverization" in those terms was Maxim Gorky.

AvdO: "If you only knew how *strange* it is to be there," Gorky famously wrote in "Last Night I Was in the Kingdom of Shadows" after seeing, at a public demonstration of the Lumière cinematograph in 1896, the first moving images of the Paris city life he knew so well projected on a screen (a piece of white cloth), which, to his estimation, was eight feet wide by five feet high (2.5 x 1.5 m).[2] Was there astonishment?[3] Yes. But there was more. Gorky clearly sensed the strange impact of the "Gullliverization" of some of the figures shown on the textile screen. He wrote about their constantly changing sizes, how they would sometimes appear tiny, caught in the depth of the image, where figures would appear only a tenth of their normal human size; while at other times they would appear "colossal," taking on weird proportions when moving closer to the camera. Such distortions, he felt, were not merely strange, they were "grotesque" (Gorky uses the word several times in the course of his two essays).

From the beginnings of the cinema, such incidental and accidental effects as the visual alterations initially noted by Gorky, were consciously exploited by producers and projectionists, who sought to create "crazy" effects,[4] veering toward the comic, the repulsive, and the overtly grotesque for entertainment reasons. In turn, spectators have proved highly sensitive to simple distortions in size and scale (before habituation kicks in, that is), which fed into the cinematic imaginary so that, as Gorky noted, spectators regressed into a dreamlike state and felt as if they were waking up when the projection was over.[5]

Even in our media-saturated era, the current multiplication of screens of different sizes and shapes, though not all of them new, has a potentially high experiential impact. Viktor Shklovsky, as you recalled in your introductory comments to the topic, highlighted the strangeness of an everyday life permeated by new techniques not yet under the regime of habit. It is no surprise that, especially at a time when technological changes affect our perception of scale relations, the production of the entertainment industry as well as the art world shows a notable increase of fantastic, hybrid figures. Such figures play on the kind of instant and strong emotional impact that, as studies of the grotesque aesthetics have emphasized, the grotesque elicits in viewers.[6] Indeed, as Noël Carroll observed in 2003, the grotesque has become again a dominant visual

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regime.[7] One of the reasons is, I think, the "Gulliverization" of life created by our new screen cultures.

MB: I would even argue that part of the appeal of certain screening devices is derived specifically from the effects of shifting scale and from the kind of alterations the image is subjected to. In the case of the moving image displayed on small to very small screens for instance, the appeal is not limited to issues of ease of access, mobility, and transportability, and the possibility of secluding oneself from the bustle and boredom of modern, commuter life. These aspects obviously play a key role, but miniaturization yields its own power to fascinate, one that has affinities with both the sublime and the grotesque.

Though a growing number of films are shot for TV and smaller screens – we can come back to this later – traditionally, filmmakers shoot images intending them to be viewed primarily on the large screens of cinemas (indeed, only the combination of the two, film and public display on a large screen, can be described as "cinema"). When viewed on the tiny screens of smartphones therefore, such images acquire a completely different look and effect. Susan Stewart talks about the "hallucination of details" that some miniatures elicit.[8] There is something extraordinary about the wealth of details included in a film image (even in the most minimalist of art films), reduced, in perfect scale, to a screen that fits in my hand. Not only mobile phone manufacturers have made sure to improve the quality of the screens, but miniaturization operates a condensation of details and colors that increases image rendition: in the past, I have compared the miniaturized film image glowing on a small TFT-LCD (thin-film transistor liquid crystal display) screen to miniature paintings and the work of manuscript illuminators.[9] Bill Viola relied on such effects, as well as on the artistic tradition of the miniature (the medieval miniature in particular, used to recount the lives of Christian saints) for his 2001 piece CATHERINE'S ROOM. In this video installation work, five screens measuring 22.4 by 15 inches (57 x 38 cm) are placed side by side. They show small cell-like rooms where the same woman is seen engaging with simple tasks (making her bed, sewing, reading, praying, sleeping) at various times of the day. The cells are in perfect equation with the frame and the framing is absolutely still, so that the five images evoke the many rooms of a doll's house. There is even a small window at the back, with a tree branch, that shows the light fading as time passes. When awake, the woman's gestures and movements are minimal, performed with utmost concentration. The light is soft, the mood introspective. The images are typical of Viola's work in the way they elicit from the viewer a contemplative involvement. As a series, the videos evoke the same logic of didactic narrative account as the altar friezes and miniatures that inspired Viola, but here, wonder of wonders, these related but self-contained microcosms are animated. One delights in both the simplicity of the device, in its exactness,[10] and its live aspect: the miniaturization, from the gestures of the doll-

size moving figure to the tiny pieces of furniture, to the changing light, brings forth a sense of perfection. At the same time, with its toy-like smallness, the work creates an impression of intimacy and vulnerability.

Fig. 1: Catherine's Room (Bill Viola, 2001), Installation View, Grand Palais, Paris, 2014.

In Viola's piece, displayed in galleries and museums, miniaturization creates a sense of awe. In more ordinary settings, in buses and subway cars, the sight of tiny universes brought to life on small screens held in the palm of commuters' hands, has become familiar. Yet, here as well, miniaturization yields a definite if ambiguous appeal: there still is something extraordinary, as well as grotesque, in the sight of moving, breathing, human forms reduced to the size of insects. The grotesque aspect is even more pronounced when those reduced forms are those of famous actors and actresses engaged in the frantic tempo of an action movie. For, miniaturized and enclosed in the limited space of a very small screen, their condensed movements look frenzied and their actions, even the most heroic ones, become even more derisory when taking place in the space a screen of a few inches affords, and can be cut short by the simple pressure of a thumb.

Though the process is different, the same fluctuation between the sublime and the grotesque occurs with enlargement. With enlargement, the issue of fragmentation, of the close-up as a monstrous, self-sufficient entity, as famously pointed out by Sergei Eisenstein, comes into play: a detail shot in close-up and displayed on a cinema screen takes on an autonomous life. The part of a body in close-up may also become a landscape on which the eye wanders (remember Agnès Varda's work on the cinematographic nude; for instance, the way her slow panoramic close-ups transform Jacques Demy's or Jane Birkin's body into such a landscape). Equally, the close-up brings forth the monstrous and grotesque: on a cinema screen, even the most beautiful face, its mouth transformed into a dark, humid grotto, eyes like mounds of gelatin, eyebrows like grass, can be both an object of awe and repulsion and filmmakers played on this double edge effect from the start.

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AvdO: From early on, enlargements such as close-ups tended to be marked by cinemagoers explicitly as "unnatural," "grotesque," "absurd," or indeed "monstrous."[11] One reason for this, I would argue, is that viewers instantly take note of the distorted proportions thanks to their embodied cognition of the "natural" size and proportions of beings and things.[12] Another reason must be that such an enormous figure simply falls outside our biological and ontological categories, turning an otherwise normal creature into something miraculous or monstrous. As a result, the technique of enlargement, simple as it may seem, complicates the viewing experience: enlargement easily de-automatizes the smooth viewing experience, destabilizes the ontological status of the seen. An audience may well find this uncanny, horrifying, repulsive.[13] On the other hand, Carroll argues that when the seen looks quite harmless, viewers will most likely enjoy the experience and find it fantastic (awesome, wonderful) or merely comic.[14] Understandably, (extreme) close-ups in the cinema were marked as a key feature of the "photogenic" in the 1920s by Louis Delluc and Jean Epstein in France, and by Boris Eikhenbaum in Russia (in *Poetika Kino*). Carl Theodor Dreyer's LA PASSION DE JEANNE D'ARC (1928) and Sergei Eisenstein's STACHKA [STRIKE] (1925) and later films are classic examples of the way silent cinema made use of the so-called "expressive powers" of extreme close-ups. Before then, as early as 1900, pioneer filmmakers, such as G.A. Smith, promoted their "amusing" powers.[15] As you mentioned, the extraordinary experiential effects of enlarging the normally very small (such as insects) were celebrated in Eisenstein's famous joke about the cockroach and the elephants.[16] On screen, enlarged a hundred times, the cockroach becomes a monstrous sight.

MB: Eisenstein's observation always brings to my mind Ernst Hoffman's tale *The Master Flea* (1822), in which a showman, combining the effect of a magnifying lens with that of a magic lantern, frightens his audience by surrounding them with the live display of the horrifyingly enlarged silhouettes of insects. Eric Bergeron produced an animation film, based on a similar idea, UN MONSTRE À PARIS (2011), set in the 1910s, in and around early cinema studios.

AvdO: But then, gigantically enlarged insects may also become "mysterious," (as in the short 1932 documentary MICROSCOPIC MYSTERIES by Hugo Lund). On the other hand, it is worth noting that when something is represented *smaller* than in real life – as on television's earliest diminutive screens, which, in effect, showed a miniature world even when not using close-ups – this does *not* induce a confusion of biological and ontological categories. As with maps, due to habituation we simply understand – that is to say, ignore – the altered scale. We cannot, however, adapt that easily to enlargements. It has been argued (by Carroll, among others) that large creatures and things, since they are potentially harmful to us, trigger an acute sense of alertness: hence, we cannot just ignore a thing or

being of that size and scale.[17] Most of these effects film directors know from experience, and the same goes for photographers.[18] Moreover, it may be argued that two completely different (aesthetic or poetic) attitudes towards enlargements and close-ups (and towards new optical and display technologies, by and large) have always existed in the history of the cinema: on the one hand, a typical extra-institutional, avant-garde curiosity to experiment with technology-induced perceptual and aesthetic transformations, celebrating "*de*-automatizing" effects that could re-sensitize the viewer; and on the other, an eagerness to introduce new technology into an already existing, institutionalized viewing practice without disrupting the viewing routines of the audiences of "natural" viewers.[19]

In light of this, it should come as no surprise that media history shows an interesting dialectic between cinema and television, and the processes of naturalization and de-naturalization. For example, the introduction of television's small screen, with screens as big as a hand, provided a new basis for a more successful naturalization of the facial close-up, which, on the cinema screen, was grossly unnatural. However, when mainstream television's typical close-ups and sound-driven aesthetics – so eloquently described by John Ellis[20] – are transferred back onto the enormous screens of the cinema, this medium suddenly and radically *denaturalizes* the familiar television format. It seems to me that this is the dynamics that drove the aesthetic innovation of New Hollywood directors such as Leone, Cassavetes, and Scorsese.

MB: Yes. Peter Weir classically exploited this process of naturalization and de-naturalization in THE TRUMAN SHOW (1998). Remember how, depending on the context, Truman's face appears on a different scale, ranging from small to human size and gigantic. In one sequence of parallel editing, we first see the woman who is in love with Truman touching the corner of her television screen where, during a news broadcast, a small insert shows a picture of the young man. Then, Weir cuts into another domestic setting where Truman's face appears at almost natural human size on a smallish, transportable TV monitor placed at the end of a bathtub – here, to emphasize the mirroring effect of the anthropomorphic screen size, both Truman and the owner of the television set are asleep. And finally, we find ourselves in the TV studio, where an enormous screen displays the same image of Truman resting, seemingly oblivious to anyone's gaze on him. The reality show host stands in front of his monstrous creature and eventually touches the screen.

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Fig. 2: The Truman Show (Peter Weir, 1998).

AvdO: This example brings us to the question of distance and closeness, the tactile experience that some screens allow, and the experiential effects of moving between giant screens typically viewed from a distance and small touchable and wearable devices we carry on our bodies. Between these two types of screens meant for shared viewing and individual viewing respectively, there is, of course, the home-based TV screen. It is close and private enough to be touched, but with a nightmarish quality to it as evoked in David Cronenberg's Videodrome (1983), where we see a man caress and kiss the screen before being swallowed by it.

Fig. 3: Videodrome (David Cronenberg, 1983).

You have written about small-scale screens and miniature and puppet-size representations of the world on our mobile phones in terms of the intimacy, touchability, and tactility they allow and invite.

MB: Films like THE BIG SWALLOW (James Williamson, 1901), Cronenberg's VIDEODROME as well as installation works like CORPS ÉTRANGER (Mona Hatoum, 1994) and À LA BELLE ÉTOILE, (Pipilotti Rist, 2007), where the screen absorbs or, alternatively, the camera enters the body, play on the grotesque, transgressive effect of dissolving the boundaries between body and apparatus. Indeed, although, as Vivian Sobchack and Laura Marks in particular eloquently argued, cinema images often encourage a tactile gaze, touch as actual physical contact is not normally associated with large screens: with few exceptions, in the cinema, in the black box of the gallery, the mode of reception remains that of distance and awe.

In contrast, the non-threatening, intimate, touch-based interface offered by smartphones encourages us to exercise our tactile gaze (to take in the high concentration of details that such images yield) but also to interface with the image in a tactile way, through our fingers.

Casetti and Sampietro talk of an "existential bubble," to describe the kind of immersive viewing that a small screen can induce even in public spaces, with the help of the headphones or earplugs that isolate the user from the surrounding bustle and noise. Unlike the experience of cinema spectatorship, it is a highly individualized mode of perception that yields a specific relation to the image in terms of intimacy as well as control and possessiveness. In the past, I have compared the ownership of small screens with the tradition of the miniature portrait, which people carried with them in their pocket or around their neck, against their skin, so as to keep the image of a loved one close.[21] With the smartphone, the sense of possession also lies with the shift from mere viewer to "user" – whom Michel Serres calls *Petite Poucette*.[22] A smartphone is, after all, an expensive kind of toy.[23] In the "epidermal" mode of viewing, as Casetti and Sampietro call it, the viewer-user switches between several objects and privileges interaction with the device as device, leading to a distracted and discontinuous gaze: here, the quality and form of the image becomes more or less indifferent, and film sequences are often glanced at in "pill-size" doses.[24] This is not necessarily a prominent form of "viewing": as Roger Odin has pointed out, in Asian cultures in particular, service providers are developing film distribution and television broadcasts for commuters who face long and tedious journeys in public transport across dull suburban and urban landscapes, and may watch entire films in one go.[25]

For Casetti and Sampietro, the emergence of the mobile as the "fourth screen,"[26] as Juliana Pierce calls it, has been facilitated by a gradual familiarization: the emergence of television and, later, the computer, through which we have grown used to watch movies in small frames such as Quicktime, Vimeo, or YouTube.[27] Of course, one may adopt a media-archaeology approach and look back at earlier modes of viewing that did not involve public projection. The kinesthoscope or peephole viewing, or the Zoetrope, relied on the individual view-

ing of small-scale images. Alternatively, the manipulation involved in kineograph or flip book viewing could be compared to the kind of gesture-based activity associated with mobile media devices such as smartphones.

AvdO: Odin also reminds us that small screening devices such as smartphones are used as cameras and editing tools, to make films.

MB: Indeed – and here, the issue of scale brings us back to de-familiarization as creative gesture: in mobile-phone film festivals, where films can generally be watched on a diversity of screens, cinema screenings often work best, not merely thanks to the collective viewing experience, but also because of the transformation that the shift in scale and technology subjects the film image to. When Jean-Luc Godard experiments, as he did in his last feature film, the aptly called ADIEU AU LANGUAGE, with all kinds of recording devices including the iPhone, but also GoPro cameras and 3D capture, the end result must be experienced on the large screen of a cinema. Only when the image is displayed on a large scale do the aesthetic variations derived from the different breeds of image truly show, creating the painterly as well as specifically digital effects Godard is striving for. Similarly, I would argue that Jean-Charles Fitoussi's NOCTURNES POUR LE ROI DE ROME (2005), a feature film mainly composed of images shot with a mobile phone camera,[28] needs to be seen on a cinema screen. Since the film takes the form of diary, the sense of intimacy characteristic of small screens is not lost: the sound track is largely composed of a monologue told through the granular, accented voice of an old man who takes the spectator into his confidence. In effect, both the image and the sound are "grainy," creating a sense of haptic closeness. As far as the visual effects are concerned, the process is thus the reverse of what I described earlier in relation to miniaturization (where compactness yields higher resolution and elicits its own, different, haptic effects[29]). In the shift to large-scale display, the mobile phone film image appears in all its hazy rendition and crepuscular light, with its pixilated surface and imperfections, its dissolving color fields and outlines. Paradoxically (since the digital is supposed to rhyme with the immaterial), it recalls analog media, both painterly surfaces and the fragility and delicateness of super 8.

Indeed, watching it for the first time, I was reminded of a comment by filmmaker Alain Tanner who, talking about the use of 8mm film for DANS LA VILLE BLANCHE (1983), describes the 8mm film images as a "resurfacing of matter."[30]

AvdO: Interestingly, shifting between different sizes and types of screens, and between old and new media, invites what Tom Gunning calls *re-enchantment*. As he observed, "the cycle from wonder to habit need not run only one way. The reception of technology allows re-enchantment through aesthetic de-familiarization [...]."[31] The typical grammar or film language (as Metz would call it) devel-
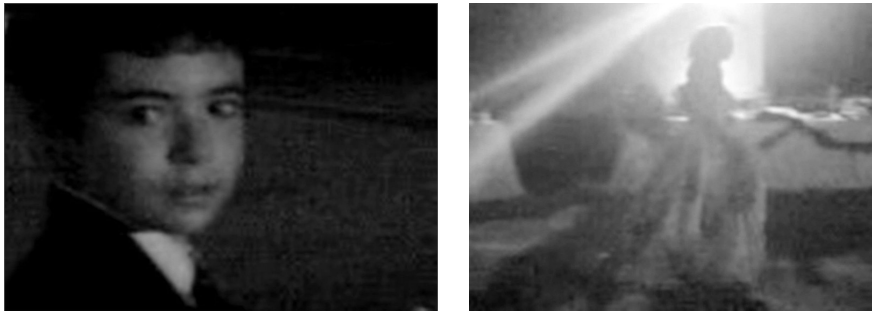
Fig. 4: NOCTURNES POUR LE ROI DE ROME *(Jean-Charles Fitoussi, 2005).*

oped under the regime of classical narrative cinema, with its continuity editing and a sparse use of the facial close-up, was changed overnight by New Hollywood directors who were used to the aesthetics of 1960s and 1970s television. This visual style had, by then, become completely standardized and mainstream, and was not even meant to have an aesthetic value. Yet, by using TV's typical grammar *on the big screen*, in the cinema – using a very different medium and *dispositif* for which TV's language was not made – these directors were indeed able to deepen the spectator's viewing experience with extreme facial close-ups (from chin to brim) and a prominent sound track.

The digital era brought about its own forms of remediation, as in John Lasseter's TOY STORY (1995) for instance, where the typical visual grammar of comic book figures (e.g., hard colors, smooth surfaces, lack of skin texture, lack of details, mechanic movements, exaggerated facial expressions) is transferred to the cinema screen with the help of Computer Generated Imagery (CGI).[32]

TOY STORY seduced cinemagoers, and Pixar has since imposed their new grammar for CGI animations, as in INSIDE OUT (2015). The question is: will there be a typically new film language for mobile phones, as commuters worldwide seem to provide an interesting market? And if so: what will its grammar look like? And what dialectics will a new phone film language create given the old film and TV languages we already have?

MB: Already, filmmakers and amateurs using new technologies of capture are indeed developing a specific mode of shooting and editing that may be specifically suitable to, say, very small screens. However, there is a big difference between exploring the creative potential of new technologies and going through a process of naturalization that means adjusting to the lowest common denominator. As we know from the way a number of filmmakers sought to pre-empt the "boxing" and pan-and-scan reformatting regimes of television and VHS, and later, of some DVD editions, to adapt the cinematic image to new technologies and screening norms can rhyme with the impoverishment or standardization of cinema's language. In the encounter between old and new technologies on the other

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hand, especially as such encounters occur in the context of cohabitation, rather than planned obsolescence and the mere replacement of technologies, we find again the kind of experimental curiosity characteristic of the avant-gardes you mentioned earlier, and with it, maybe, a promise of endless re-enchantment.

Fig. 5: Toy Story (*John Lasseter, 1995*).

The Skin and the Screen – A Dialogue

Laura U. Marks, Dominique Chateau, and José Moure

DC-JM: At the beginning of your very inspiring book, *The Skin of the Film*, you write that this title "offers a metaphor to emphasize the way the film signifies through its materiality, through a contact between perceiver and object represented."[1] And you define *haptic visuality* as "the way vision itself can be tactile, as though one were touching a film with one's eyes."[2] Between "materiality" and "touch," on one side, and "metaphor" and "vision," on the other, haptic visuality concerns two theoretically distinguished, though strongly related, aspects of cinema spectatorship. The first aspect concerns the real conditions according to which the spectator is connected to the film. The second aspect concerns the way the spectator's eye functions insofar as the connection with film involves not only the organ of vision but also a range of other feelings mediated by vision, starting with the haptic ones. The issue of concern to us, to begin with, is how one can possibly consider the definition of screen and screening to include these two aspects and their interrelationships in order to build the kind of new reading you are aiming at.

LUM: You're right that the theory has two sides, one of materiality, one of subjectivity. In terms of the real conditions of reception, I argue that a series of material connections maintains between the original pro-filmic entity and the means that captured it, through the media that reproduce, transform, and transmit it, and finally to the embodied receiver. (In the case of cameraless films and animation, the series begins with the originating act of image-making. In computer-based media, algorithmic transformations and compressions enter the series at various points; I argue that these do not completely rupture the connection.) This series of connections is what I term enfolding-unfolding aesthetics, which is grounded in the thought of Peirce, Deleuze, and Whitehead, among others. You see that the screen is just one point in a series of transmissions or unfoldings; but it's an important point, the one where the film meets the viewer. And we mustn't forget sound, another element that maintains a continuity of contact from its origin point, through various transformations, to the final reception.

In terms of the spectator, yes, of course, the beholder does not actually touch the film or the pro-filmic entity. Yet, to the degree that the encounter affects the

body, it produces subjective effects like those that arise from physical contact: it's not just a metaphor. I argued that the haptic image is more likely to give rise to an embodied and multisensory reception that awakens embodied memory. This is because a haptic image or haptic way of looking postpones the figure-ground differentiation that is required for identifying objects of vision as separate from oneself, and in turn psychologically "identifying with" them.

You mention "other feelings mediated by vision" (and again I would add hearing). I have developed a method of analyzing a film (or other things) that I term affective analysis. It analyzes reception by comparing a series of responses (which may be experienced simultaneously) that move from the extra-discursive to the highly discursive. They are affective response, embodied response, feeling, perception, and discourse or concept. Different theoretical approaches come in at each point: a Deleuze-Spinozan approach to affect, a phenomenological approach to embodied perception, and so on. Affective analysis has proven to be a useful method for arriving at an analysis by noting contrasts between affective, perceptual, and conceptual responses.

DC-JM: The skin metaphor raises several questions. First, to what extent can the screen be thought of as skin? And what exactly is it the skin of? Assuming the hypothesis, we wonder if the screen operates as a skin by itself or if it only underlines the material presence of the image. Similarly, can we consider the screen as a medium that bodily relates the viewer to the image, or does the haptic way of looking encourage a relation to the screen itself, to its materiality? This raises a subsidiary question over the specificity of screen definition: is there a difference between the skin of the screen and the skin of the image; in other words, between the skin of the screen and the skin of the film? Furthermore, in your conception of haptic visuality, the sense of touch as it is mediated by vision is considered significant, but your sensuous theory is also concerned with other synesthetic phenomena. In *Touch: Sensuous Theory and Multisensory Media*,[3] for example, you examine the "logic of smell," which suggests that you are more generally interested in the body and how its multiple sensations – which involves the coordinated use of multiple sensory organs – are activated by cinema? To what extent is it fruitful to consider the screen in light of such a body theory?

LUM: Interesting question. Haptic visuality relates to the materiality of the medium at several levels, including the medium of recording, of editing, and of the projection or transmission medium. I wouldn't over-emphasize the screen, for it is just one part of the material way the image reaches the viewer. Also, I used the term "the skin of the film" to emphasize that movies, especially those of which few copies exist, get changed in their material circulation – films gain scratches, analog videos demagnetize, digital media lose data. At the same time, they gain more meaning from the audiences among which they circulate.

DC-JM: Thinking of the screen in the frame of the "embodied experience of cinema," it seems appropriate to consider whether the "images on screen" allow for a more embodied experience than natural perception would. Furthermore, we would also like to understand if, in your opinion, there is a great difference between the experience of the screen and the experience of the image. Specifically, can we separate these two experiences when watching a movie? How does the screen by itself increase the embodied experience of cinema? And, insofar as the images you call haptic invite a look that moves on the surface plane of the screen, does this haptic looking necessarily need the flatness of the screen or merely an impression of visual flatness? And to what degree can 3D images transform what you call haptic looking?

LUM: Yes, I think it's important to distinguish between the experience of the image and that of the screen. I follow Vivian Sobchack's observation that every medium and, indeed, every individual film or moving-image work perceives and expresses in its own way.[4] When a moving-image work is exhibited on the platform for which it was designed, image and screen overlap. However, our response to the medium or platform may diverge from our response to the image. This is especially the case when time-based media are "remediated" for screens different from those on which they originally appeared, such as theatrical films being watched on a TV screen, a mobile phone, or a social-media platform like YouTube, or videos made for gallery monitors projected large. When this divergence occurs, I've noticed that new embodied experiences are made possible, but also the initial embodied experience may wane. Most of the 3D movies I have seen appear sculptural. I think Antonia Lant's Riegl-inspired argument in "Haptical Cinema" would analyze them well.[5]

DC-JM: Subject to other aspects you would find more relevant, it seems to us that your questioning about the difference between film and video also deserves to be applied to the screen topic. Against the commonplace that film is a tactile medium and video an optical one, you consider video as a "haptic medium."[6] Contrary to the MacLuhanian idea that "video is a 'cool' and distancing medium," as you write, you argue that "video's tactile qualities make it a *warm* medium."[7] You add: "It is the crisp resolution into optical visuality that makes an image cool and distant."[8] On this basis, it seems possible to assume that the more or less "crisp resolution" depends not only on the medium, insofar as it would be definitively fixed, but also on the screen's qualities and, by the same token, on the differences of the screen's forms and contexts (as we experience it in theater, in front of our computer, or with a mobile phone).

LUM: Yes. Now that digital video has superseded analog video, and high resolution has become the norm, it's best not to generalize but to consider each work

to determine how it achieves optical and haptic images and solicits optical and haptic looks. Low resolution images are not necessarily haptic. Compression algorithms for digital video are usually anti-haptic because they emphasize edges, proliferating figures on the screen. A sharp, high-resolution movie can include haptic passages that are all the more effective for the contrast. Recall that I defined haptic images as also including crowded images in which there is too much to see, making it difficult to isolate figures from the ground: these are high-resolution image**s**. In terms of low resolution, we need to consider whether the work invites an embodied relationship with the pro-filmic entity or simply draws attention to its own materiality, as in the "poor" and precarious images that Hito Steyerl[9] and Arild Fetveit[10] analyze. I do find that looking at an extremely low-resolution or glitchy image invites a rather terrifying shared embodiment with the unfiltered noise of the universe itself.

DC-JM: When looking at all the different screens in different contexts for different uses a question arises that brings us back to the haptic way of looking, which depends not only on tactile connection on the surface plane of the screen, but also on a close vision. Is this close vision more determined by the sensuous closeness to the represented objects on the screen or by the closeness to the screen itself, whether we watch a movie in the front row of the theater, sitting in front of a computer, or on a mobile device?

LUM: Looking close up does not generally yield a haptic image. In fact, it's often the reverse: movies made for small screens tend to heighten figure-ground contrasts, to be extra-optical. Viewing movies on computers or mobile devices does tend to produce certain embodied responses, but these in themselves do not ensure a more sensuous reception. Indeed, when they include distraction, eye strain, and back pain, they distract from the embodied relationship with the film itself. In general, I think a distracted viewer is more likely to respond cognitively and not sensuously. Moreover, the media of the contemporary attention economy, while they certainly appeal to cognition, seem to bypass the perceptual in the attempt to directly produce affective responses.

DC-JM: Your "system," so to speak, has another input, which also deals with the body: the cultural aspect. Because the body not only feels all kinds of sensations, it also embodies culture. This quotation of *The Skin of the Film* sums it up nicely: "I am exploring sense experience in cinema both to seek a primordial state of sensory innocence, but to find culture *within* the body. [...] We bring our own personal and cultural organization of the senses to cinema, and cinema brings a particular organization of the senses to us."[11] Screen, as a matter of fact, gets in on this particular organization of the senses that cinema brings to us. How do you see the screen play a role in the functioning of such a cultural embodiment?

Reversing the perspective, the screen may be considered as the mediation of cultural embodiment, it also is determined by cultural specificities: do you agree with the assumption that the screen is conceived and experienced differently according to cultural characteristics? Can we precisely distinguish between different cultural ways of understanding and experiencing the screen? Incidentally, what do you think of the "*dispositif* theory" (by Jean-Louis Baudry) and the "*screen* theory" (feminist screen theory, specifically)?

LUM: Again, sorry, I don't see much relevance of the screen itself here, unless we are talking about the larger social and material circumstances in which a given screen is found. Audience studies help us attend to the cultural aspects of embodiment in viewing. Ratiba Hadj-Moussa observes that for women in Algeria, film viewing usually takes place in the privacy of the home, watching movies on the small screen with family.[12] Philippe Azoury's oral history of the Cinémathèque de Tanger involves all kinds of multisensory experiences, including the sounds of children, the soft-drink seller, the peanut seller, and sunflower seeds crunching underfoot.[13]

Dispositif theory remains useful for analyzing the normative reception that aligns the spectator with the production and projection apparati. Dispositif theory and "*Screen* theory," including the latter's feminist variants, generally rely on a conception of the subject drawn from Lacanian psychoanalysis, which does retain value for analyzing the illusion of mastery that normative media work to instill in the viewer. My work, grounded in phenomenology and the philosophy of Deleuze, departs sharply from these approaches.

DC-JM: You are a well-known specialist of Islamic art. One of the key points in your book, *Enfoldment and Infinity: An Islamic Genealogy of New Media Art*,[14] is that there is an analogy between Islamic art and media art, insofar as they both can be characterized by the crossing of abstract lines and haptic visuality. This aesthetics, apart from media art, has to do with a religion-dependent relationship. It is, as Dominique Clevenot puts it in *Une esthétique du voile. Essai sur l'art arabo-islamique*, "an aesthetics of the veil." He writes: "The veil of the woman indeed, whatever it may receive various names locally, is designated in Arabic by the legal term 'hijâb': what hides, what separates. In that designation is tied a whole problem of Islamic culture as 'hijâb' is also a term of the religious lexicon, a mystical metaphor, a philosophical concept. This is the screen which prohibits any illusion of resemblance between man and divinity."[15] It is no coincidence that we find the veil and the screen side by side here. As far as we know, the word *hijâb* means both curtain and screen. In other languages the words that denote the screen have a comparable extension. We observe also, in most of these languages, the duality of the screen which hides and the screen which shows. Can we consider that the broad-based aniconism in Islamic culture has consequences

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for the design of the screen? Is the "screen which hides" semantics a more topical question in this context than it is in other cultures?

LUM: Indeed, my theory of haptic visuality focuses on selective revealing and concealing. In particular, I argued that the partial revelation of a figurative image draws the beholder closer. That is one of the reasons I was drawn to the Islamic aesthetics of aniconism, which have developed many ways to withhold figuration so that the beholder's relationship with the image can be more abstract or (and sometimes at the same time) more embodied and performative. The most useful way I have come across to integrate theories of the veil with theories of the screen is Walid El Khachab's adaptation of Arab and other Eastern concepts of veil and fabric to propose a kind of spatial organization based on degrees of privacy and access.[16]

DC-JM: You say that the cinema functions as a fetish. Could we say that today it is rather the screen, in all its many forms, which functions as a fetish?

LUM: I didn't say exactly that; rather, I argued that images act as fetishes when they condense a great deal of material history within themselves, and that these histories are activated not through sight but through physical contact (or a look that acts like a touch). This definition drew on anthropological theories of the fetish and also on Benjamin's theory of aura. Using this definition, we can consider many images to be fetishes in that they contain within themselves the history of their production. This history can sometimes in turn be unpacked by the receiver. This observation developed into my theory of enfolding-unfolding aesthetics, which argues that a material connection maintains between the original pro-filmic entity and the means that captured it, through the media that reproduce and transmit it, to the embodied receiver.

The Screen and the Concept of *Dispositif* – A Dialogue

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DC-JM: Among the theorists who try to define the screening situation as a *dispositif*, your propositions are particularly interesting and particularly precise. In this respect, we are primarily thinking of the following proposition where the factors relevant for defining the *dispositif* are very clearly distinguished, while this definition prefigures how these factors interact with one another:

> In a somewhat simplified form, one could summarize the configuration that Baudry describes with the aid of the concept of *dispositif* as follows:
> a) a material technology producing conditions that help to shape
> b) a certain viewing position that is based upon unconscious desires to which corresponds
> c) an institutionalized film form implying a form of address trying to guarantee that this viewing position (often characterized as "voyeuristic") functions in an optimal way.[1]

In fact, the screen can be examined from these three angles: technology, spectatorship, and institution. For this purpose, it seems that we need a specification of these factors, different from those defining the film, although obviously linked to it. Please, could you comment on that? To put it more broadly: what role does the screen play in the context of the *dispositif*?

FK: Leaving aside Baudry's psychoanalytical reading of the screen (we come to that in a minute), it is firstly a central element of the *dispositif* of fictional cinema (but not exclusively, because this would also be true for documentaries, educational films, even home movies): the screen is what the audience looks at, in a sense, but they actually only look at it before the show starts (unless it is covered by a curtain, but in today's movie theaters this has become rare). When the projection starts, the spectators no longer see the screen, but the images that are projected upon it. So the screen is, as it were, effaced by the still or moving images that appear on it, and when we see something that is part of the screen –

irregularities of the surface, stains – we consider this distracting or even disruptive.

So the screen is, on the one hand, a central element in the topology of the *dispositif*; on the other hand, it has to become invisible or "transparent," because otherwise the *dispositif* and the mode of communication it implies – fictional, documentary, educational, etc. – cannot function properly. It is not by accident that certain avant-garde movements have tried to disrupt the *dispositif* by attacking the screen. And we know from Edwin S. Porter's Uncle Josh at the Moving Picture Show (1902) as well as from Jean-Luc Godard's Les carabiniers (1963) that the confusion of the filmic image and reality results in the tearing down of the screen as a material object.

In a cinema, the audience is oriented towards the screen (at least ideally, individual spectators may turn their attention elsewhere, for instance to the person with whom they are – think of the Drifters singing about "kissing on the back row of the movies on a Saturday night"). Baudry describes the spectators as being "captivated," hence his comparison with Plato's allegory of the cave. But they are not captivated by the screen as such, but by what they see projected on it. In the end, it is the space of the diegesis they are looking at, so the screen participates in what Christian Metz describes as a structure of disavowal, and in that perspective we might say that the first thing that is disavowed is the material presence of the screen.

DC-JM: In a series of papers, you investigate the history of the word "*dispositif*." There are two well-known sources: Michel Foucault and Jean-Louis Baudry.[2] Could you elaborate on how their approaches differ with regard to the theoretical account of the screen's status?

FK: According to Baudry, the screen is primarily one of the three elements that belong to the space of projection, which itself is part of what he calls the basic cinematographic apparatus (*appareil de base*), the other two being the dark hall and the projector/light/filmstrip-entity. It is the site of projection and reflection, which, within Baudry's Lacanian framework, functions as a "mirror-screen" of a "paradoxical nature," as he says, because it does not reflect the reality of the screening situation, but of the images. In addition, Baudry uses the concept of the "dream screen," which he borrows from Bertram Lewin, to further develop his psychoanalytic theory of cinema. So Baudry "frames" the screen on the one hand by referring to Plato's allegory of the cave, and on the other hand by using psychoanalytic theory to lay bare what he sees as the ideological dimension inherent to the cinematic *dispositif*. The screen thus no longer is a material object – it is in fact ascribed the paradoxical materiality of a mirror that is not reflecting what is in front of it – but a theoretical construction.

To look at Michel Foucault's concept of the *dispositif* and using it for a theoretical account of the status of the cinematic screen is a rather challenging task, because this asks for something like a translation. Foucault introduces the concept of *dispositif* in his work on the history of sexuality, so he thinks about a problem of a quite different order and I wonder if one can isolate an element such as the screen in a Foucauldian analysis. One could think, however, that with regard to the construction of a specific subject position, Foucault might come to quite a similar result as Baudry, even though he would certainly not subscribe to Baudry's psychoanalytical explanations. But then – as I have tried to show elsewhere – we would take one historically specific, and to some extent also idealized form of spectatorship as a general rule. If, on the other hand, we take a historical perspective and look at the discursive construction of moviegoers in different periods, we can actually see that very often it is the unruliness of audiences that is seen as a central problem by reformers, pedagogues, and other figures of authority, as many studies have demonstrated. So from a Foucauldian perspective we could actually analyze how the idea, sometimes ideal, but also the figure (as a theoretical construction) of a disciplined spectator emerges, which for Baudry is simply a given. And it might be interesting to see whether the status of the screen in such a historical investigation changes.

DC-JM: Several key issues that we find in Baudry's texts deserve special attention. They lead to different hypotheses. One hypothesis would be to consider the screen merely as an element of what he calls the *appareil de base*, i.e., one of the technological elements necessary to produce and watch a film. Another hypothesis would be to consider the screen as the element that guarantees the specificity of the *dispositif* and the viewing situation. And lastly, within the configuration Baudry describes, the screen could be considered to belong to both the *appareil de base* as well as to the *dispositif*. In these three cases, are we talking about the same kind or concept of the screen?

FK: In Baudry's text, to begin with, we could indeed say that the *dispositif* is one element of the basic apparatus, and so the screen necessarily belongs to both. So I am not quite sure where you see the difference between the screen being merely an element of the *appareil de base* and the screen belonging in addition also to the *dispositif*. What one could say, however, is that in the first case, the focus is rather on the way the screen as the site of the presentation of the filmic image to an audience relates to the technologies of image production, and in particular to the production of the impression of reality that is seen by Baudry as the central ideological task of the basic apparatus. In the other case, the screen is seen with respect to its role in the triangle it forms together with the projector/filmstrip-unit and the spectator. So, from this point of view there is a difference in focus and in status of the screen, as in the one case it is regarded as one technological

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element of the basic apparatus, not fundamentally different from the micro-phone, the camera, the editing table, etc., while in the other case it is functioning within a specific relationship linking elements that do not belong to the same order of phenomena.

The question, whether the screen can guarantee the specificity of the *dispositif* is a very interesting one, because it can be linked to an ongoing discussion about "the end of cinema" to which a number of important film theorists such as Dudley Andrew, Jacques Aumont, Raymond Bellour, Francesco Casetti, André Gaudreault, Philippe Marion, David Rodowick, and others have contributed over the past few years. Interestingly, their main point of departure is the vanishing celluloid, the filmstrip being replaced by a Digital Cinema Package (DCP), something that in the meantime has become more or less a fact. And maybe there will be other technical solutions in the future that will grant producers and distributors even more control (because obviously, this process is mainly driven by economic interests). What we can quite safely say, however, is that it does not seem to matter much for the general moviegoing public. There are of course all the new screens that have come to challenge the cinema screen – from the so-called "home cinema" installation to the laptop, the tablet, and the mobile phone (and maybe here we should actually rather talk of a display). Interestingly, neither English nor French make a lexical difference between the cinema screen and the TV screen (in French you sometimes say *grand écran* vs. *petit écran*, but it is still the same word). In German (or Dutch), however, there are two different lexemes, *Leinwand* (*doek* in Dutch) for the cinema screen and *Bildschirm* (*beeldscherm* in Dutch), which is closer to screen and *écran*, but specifies that it serves to present all kinds of images; from TV screen to mobile phone display images. The word *Leinwand* is used also for what in English is called "canvas" and in French *toile*, so it covers a semantic field ranging from painting to all types of projected images (you simply cannot project an image onto a *Bildschirm* – in German this would not make sense at all). So, here we face a rather interesting problem, when we talk about specificity: in English and French the support on which we see a painting is radically different from the one on which we see still and moving projected images or electronic images; whereas, in German the painted and the projected image belong to the same side and are seen as different from the ones we watch on TV or on our computer. But what does this tell us about *dispositifs*? And what about specificity? I do not think that there is an easy answer to this. But what we could say is that the articulation of the semantic field in German draws a line between the projected image and the image appearing on a "light-emitting device" (to borrow this expression from my colleague Nanna Verhoeff), while in English or French this frontier seems not to exist lexically, but I suppose, when you ask your question you refer exclusively to cinema (which of course is the kind of screen that Baudry talks about). So, in German I can say that without a *Leinwand* I may no longer have a cinema *dispositif*, but rather some kind of public

viewing of moving images on a *Bildschirm*, some kind of giant public TV, going in a way back to the *Fernsehstuben* of the 1930s. So in that sense, for a speaker of German the *Leinwand* may indeed guarantee the specificity of the cinematic *dispositif*. I wonder, whether in English or French uttering the phrase "the screen guarantees the specificity of the *dispositif*" would not in the end seem somehow strange, because one either implies the cinema screen, or all kinds of screens and displays, and without the first there could not be a projected image, and in the second case the question would be, what then could replace the screen as the *locus* where the moving images appear. But this indeed already leads into your next question.

DC-JM: One of our concerns is to ascertain whether in the effects produced by the *dispositif* of the screening situation, the screen plays a significant role. In the same vein, we wonder to what extent the evolutions of the nature, form, quality, or size of the screen transform the positioning of the spectator and the way of functioning of the *dispositif*.

FK: Firstly, one might say that the screen has stayed the most permanent element in the cinematic *dispositif* as described by Baudry. The modes of moviegoing have changed enormously, and the technology of projection as well, from hand-cranked projectors to today's digital ones. But, of course, the screen has also changed over time, with regard to its format, obviously, but it has also changed its shape, from flat to curved, for instance. These changes, however, were always linked to and resulted from changes concerning the format of the image that was to be projected on it, and in this respect there have also been many ideas that have never been put into practice on a more than experimental scale. I am thinking, of course, of Eisenstein's ideas concerning the "dynamic square" as a reaction to the first attempts to promote widescreen formats in the early 1930s.

When we look at the arguments for the new widescreen formats that were introduced on a much more massive scale in the 1950s – which often demanded quite important financial investments and architectural transformations of the movie theaters – then the most prominent one, as always, is "realism" (mobilized today once more by directors such as Peter Jackson and James Cameron to promote 3D and High Frame Rate technology). In this line of argument, the widescreen image was said to correspond much better to human vision than the academy ratio, and the new screen technology was to provide a much more immersive experience. You may know Roland Barthes's short text on Cinemascope published in 1954,[3] in which he describes his first encounter with a widescreen projection that apparently produced exactly that effect for him.

However, if cinema is to provide this immersive experience, then the widescreen format cannot be the final stage, nor can 3D for that matter. As early as 1944, René Barjavel published his book *Cinéma total: Essai sur les formes futures du*

cinéma,[4] which projected into the future the teleological movements towards a complete reproduction of reality (an idea that also André Bazin evoked around that time). This future form of cinema, according to Barjavel, would need neither the filmstrip, nor the projector, nor the screen. The images would be immaterial, be transmitted through waves and would materialize without a screen. In Kathryn Bigelow's science fiction film Strange Days (1995), moving images are transmitted directly into the brain of the viewer with the help of a device called SQUID. And if we think about current experiments with head-mounted devices transporting us into a virtual environment, it is very difficult to predict whether the screen (in every sense of the word) will be part of the media experience of future generations.

DC-JM: Besides Baudry's proposition, you introduce your own perspective, which you call "historical pragmatics." From this alternate perspective, you consider looking at the *dispositif* as a theoretical approach that differs from the meta-psychology of the spectator, in order not to evade it, but to take into account some different forms of *dispositifs* throughout media history. This proposition is partly inspired by the theory of the cinema of attractions. You quote Tom Gunning who opposed early cinema, which he characterizes as "exhibitionist," to the later voyeuristic narrative cinema. Considering "the recurring look at the camera by the actor" as an emblematic aspect of the former, he concludes: "This action, which is later perceived as spoiling the realistic illusion of the cinema, is here undertaken with brio, establishing contact with the audience."[5]

The conclusion you draw from that is that there is a radical difference between the *dispositif* of the cinema of attractions and that of the classical narrative cinema, "at least regarding the positioning of the spectator and the mode of address inherent to the filmic form," and you suggest that this is the case "even if the material *dispositif* may seem very close to the one Baudry discusses."[6]

The screen is a part of this material *dispositif*. We could argue that there is a history of this material aspect, a history of theater and screen. But, beyond this question, is it possible to consider that the relationship to screens and the modes of spectatorship were transformed by the transition from the stage of the cinema of attractions to the one of classical narrative cinema?

FK: This is a complex question, and a quite difficult one to answer, because it includes an opposition of two historical stages, which in themselves are quite heterogeneous. To begin with, the kind of spectatorship described by Baudry is a historically and culturally very specific one, as Christian Metz already explained in his essay on "The Fiction Film and Its Spectator."[7] It rather functions like an ideal-typical description of spectatorship. Similarly, we might say that also in the early period quite a variety of spectator positions were possible, depending on the institutional context of the projection. To borrow Roger Odin's term: early

film projection could take place in a wide range of communicative spaces, so postulating just one form of spectatorship for the period would be rather reductive. This is why, in the perspective of a historical pragmatics, I try to avoid as much as possible to ontologize the *dispositif*. The questions I want to ask are not whether this or that configuration actually *is* a *dispositif*. I am more interested in seeing what happens when I look at it *as* a *dispositif*.

That being said, we could, in the light of what has been said above, signal at least one important difference in the function of the screen in both regimes, i.e., that of the cinema of attractions and that of classical narrative cinema. In the latter case, the screen is something like an interface allowing our access to a diegetic world that, in principle at least, is completely different from the spectator's world. We watch without being seen – hence the qualification of this positioning of the spectator as "voyeuristic" – and what happens in that world on, or rather beyond the screen, is inaccessible from the chair we are sitting in. When Michotte van den Berck discussed the so-called "impression of reality" in the 1950s,[8] he made the incommensurability of these two spaces a central aspect of this phenomenon. We are thus absorbed or immersed in the diegesis and ideally everything that surrounds us in the cinema fades away. And it is because there is no connection possible between these two worlds that the spectators can be absorbed in the film, a process later described by psycho-analytic film theories, and in particular by Christian Metz, in terms of identification.

The situation is different when we look at the cinema of attractions. You have already referred to the actors looking at the camera, thus establishing a connection with the spectators in the theater. The French film historian Georges Sadoul wrote about Georges Méliès that he simply reproduced the viewpoint of the "gentleman in the stalls."[9] But if we look more closely at Méliès's films, we can see that this is not just a simple reproduction of the relation between the audience and an actor or performer on a stage. Addressing the camera and, in the screening situation, the audience, creates in fact quite a complex situation, because the spectators know that they are looking at the projected image of a performer, and yet this performer seems to address them. As I have argued in an article on this phenomenon of the "gentleman in the stalls,"[10] the incongruity of the image addressing the spectators could be seen as an attraction in its own right. So in this example, the screen is not the interface allowing our access to the diegetic world, but rather a surface on which appears a very ambivalent space; one that is inaccessible to the viewer and yet it seems possible to communicate with it, or at least people in this space seem to communicate with us. So in this respect we could actually say that viewers' relationship with the screen did change in the transition from the cinema of attractions to the cinema of narrative integration.

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DC-JM: Considering the field of television, you collect some theories in which "interestingly, it seems that the term "*dispositif*" is used [...] mainly with regard to either production or the product, but does not, contrary to Baudry's theory of the *dispositif*, address the specific viewing situation of television";[11] in the same way, considering the field of media history, you remark that "for Hickethier the concept of *dispositif* with regard to television is by no means limited to the positioning of a viewer in front of a TV set, but includes all the other aspects – technological, social, cultural, economical, political, etc. – which shape and make possible a televisual communication process."[12] What could be said about "the specific viewing situation of television" or "the positioning of a viewer in front of a TV set" that would integrate into the theory of screen and enrich it?

FK: Again, also with television we have more than one viewing situation and in any event we can note quite important historical changes. In the 1950s and 1960s, television mainly was a family viewing experience, and television historians have analyzed how the coming of television also modified the whole set-up of the living room, with the TV set becoming a focal point. With the multiplication of channels and the lower prices of TV sets, including portable ones, more and more households had more than one set and alongside family viewing, more compartmentalized forms of viewing appeared. There are of course many cultural and social differences in viewing habits, and the fact that the TV is switched on does not necessarily imply that someone is actually watching. Then there was the VCR, which allowed delayed viewing, so that audiences were no longer bound to the program schedule imposed by the networks. In today's digital media environment, online services such as Netflix offer yet another viewing experience, with the possibility of "binge-watching" a whole season of a series, something that DVD box sets had also allowed. So, there is not one specific viewing position, and thus we need to carefully analyze the various configurations we want to study.

A second point we could make is related to what I said earlier about the difference between a projection screen and a light-emitting display. It is thanks to their mobility that we can witness today what Francesco Casetti has described as the "relocation" of cinema.[13] So the home-viewing situation has become part of the modes of consumption of film images. This *dispositif* clearly differs from the one described by Baudry, but interestingly also tries to emulate it as much as possible. In addition, the mobile screens that have become our constant companions open up the possibility for different viewing positions, which clearly are "not cinema," but they do exist and as scholars we need to take them into account.

For me, this is the immense power of the concept of *dispositif*: it can help us better understand the wide range of possibilities we have today when we want to watch moving images, and a historical pragmatics can help us to frame these and to analyze them in view of the communicative processes they bring into play.

Notes

Introduction: Screen, a Concept in Progress

1. In the late 15th century the English word "screen" evolved into verb form once it began to mean "to shield from punishment, to conceal." See "screen," *Online Etymology Dictionary*, http://www.etymonline.com/index.php?allowed_in_frame=0&search=screen&searchmode=none.

2. Marie Nicolas Bouillet, "Screen [Écran]," in *Dictionnaire universel des Sciences et des Lettres*, 3rd. ed. (Paris: Hachette et cie, 1857), 553.

3. Röntgen was exploring the path of electrical rays passing from an induction coil through a partially evacuated glass tube. Although the tube was covered in black paper and the room was completely dark, he noticed that a screen covered in fluorescent material was illuminated by the rays. He later realized that a number of objects could be penetrated by these rays, and that the projected image of his own hand showed a contrast between the opaque bones and the translucent flesh. He later used a photographic plate instead of a screen, and an image was captured. Thus an extraordinary discovery was made, namely that the internal structures of the body could be made visible without the necessity of surgery.

4. For instance, in 1899, the term "screen memory" was metaphorically chosen by Sigmund Freud to refer to a childhood memory that may be falsely recalled or magnified (to be of greater importance) and that hides another memory of deep emotional significance.

5. John Glavin, *Dickens on Screen* (Cambridge: Cambridge University Press, 2003).

6. Étienne Souriau, ed., *L'univers filmique* (Paris: Flammarion, 1953), Preface, 8.

7. *Ibid.*, 7-8.

8. *Ibid.*, 8.

9. Jean-Jacques Riniéri, "L'impression de réalité au cinéma," in *L'univers filmique*, 33-45.

10. Edward Lowry, *The Filmology Movement and Film Study in France* (Ann Arbor: UMI Research Press, 1985), 131.

11. Raphaël Lellouche, "Théorie de l'écran," *Traverses*, no. 2 (April 1997), http://www.cnac-gp.fr/traverses; Erkki Huhtamo, "Elements of Screenology: Toward an Archaeology of the Screen," *Iconics: International Studies of the Modern Image* 7 (2004): 31-82; Lucas D. Introna and M. Ilharco Fernando, "On the Meaning of Screens: Towards a Phenomenological Account of *Screenness*," *Human Studies* 29, no. 1 (2006): 57-76; Anne Friedberg, *The Virtual Window: From Alberti to Microsoft* (Cambridge, MA: MIT Press, 2006); and Valérie Charolles, *Philosophie de l'écran. Dans le monde de la caverne* (Paris: Fayard, 2013).

12. Francesco Casetti, "What Is a Screen Nowadays?," in *Public Space, Media Space*, eds. Chris Berry, Janet Harbord, and Rachel Moore (London: Palgrave MacMillan, 2013).

13. Marc Augé, *Non-Places: Introduction to an Anthropology of Supermodernity*, trans. John Howe (London and New York: Verso, 1995).
14. Erkki Huhtamo, "Gulliver in Figurine Land," *Mediamatic* 4, no. 3 (1990): 101-105.
15. Laura U. Marks, *The Skin of the Film: Intercultural Cinema, Embodiment, and the Senses* (Durham and London: Duke University Press, 2000).
16. Frank Kessler, "The Cinema of Attractions as *Dispositif*," in *The Cinema of Attractions Reloaded*, ed. Wanda Strauven (Amsterdam: Amsterdam University Press, 2006), 57-66.

Rectangle-Film [25x19] (1918)

1. This article was originally published in *Penombra* 1, no. 3 (August 25, 1918): 121-123.

Intersections between Showing and Concealment in the History of the Concept of Screen

1. Erkki Huhtamo, "Elements of Screenology: Toward an Archaeology of the Screen," *Iconics: International Studies of the Modern Image* 7 (2004): 31-82: "In the 19th century, and probably even earlier, the word 'screen' gained meanings that anticipated its uses as a means of displaying and transmitting information. The earliest such reference recorded in the Oxford English Dictionary is from 1810: 'To make Transparent Screens for the Exhibition of the Phantasmagoria.'" Huhtamo also notes an example from 1846 in the OED, where "screen" refers to the screen of the magic lantern, demonstrating how the "new" meaning became common around the middle of the century. Thomas Elsaesser and Malte Hagener, *Film Theory: An Introduction through the Senses* (New York: Routledge, 2010), 38: "The word 'screen' developed in the early fourteenth century from the old Germanic term 'scirm' which opens up a rich semantic field. A 'scirm' acts like a shield and protects us from enemies or adverse influences (such as the heat from a fire or the weather), thus allowing us to get closer. Yet again, a screen also denotes an arrangement that hides something or someone by dividing a space (e.g., by putting up a paravent). *In this sense, the screen can mean the exact opposite of displaying something, making something visible* or bringing something closer, but refers instead to keeping a safe distance. A further meaning of screen as a protective filter or coating is that of a curtain retraining sunlight and thus protecting light-sensitive persons or objects. This attribute is also linked to visibility and light, but in contrast to the screen in the cinema auditorium it does so in a negative sense. By way of analogy, the word can furthermore denote an object that is being used with the purpose of protecting, hiding or blocking, also implying a division or filter. *The first known occurrence of the word 'screen' as a designation of a surface that can be used to depict an image or object was in 1864*" [my italics].
2. I prefer the term "monstration" (which, for me, equates to "showing") to "displaying," seeking to create a link with Dante's terminology and recalling the reflections of André Gaudreault, thus avoiding confusion with the metaphor of the screen as "display" discussed by Francesco Casetti, to which we shall return at the

end. See André Gaudreault, *From Plato to Lumière: Narration and Monstration in Literature and Cinema* (Toronto: University of Toronto Press, 2009).

3. Michel Foucault, *Archaeology of Knowledge* (London: Routledge, 2002), 73.

4. Eugenio Montale, *L'opera in versi*, eds. Rosanna Bettarini and Gianfranco Contini (Turin: Einaudi, 1980), 40. Eugenio Montale, *Collected Poems: 1920–1954*, trans. and annotated by Jonathan Galassi (New York: Farrar, Straus and Giroux, 1998), 54.

5. Italo Calvino, "Eugenio Montale, 'Forse un mattino andando,'" in *Why Read the Classics?* (London: Jonathan Cape, 1999), 216. In fact, in *Cuttlefish Bones* it is possible to find a reference to the magic lantern; see "Flussi," in *L'opera in versi*, 74: "[...] il passato / lontano, franto e vivido, stampato / sopra immobili tende / da un'ignota *lanterna*" [my italics]. The English translation ("Flux," in *Collected Poems*, 103) does not pick up on the reference: "[...] the past, someday, / long-gone, shattered, vivid, / printed on still curtains / by an unknown light."

6. The Battaglia dictionary considers *campo* as, among other things, not only "a closed, circumscribed, limited space," "a space circumscribed by a geometrical figure," etc., but also "a space (in a painting or relief) on which the figures are distributed and stand out; a background (referring also to a description, a way of relating)," "background of the shield, flag or banner on which the *impresa* appears." For *campo*'s meaning as "region of space on which the gaze is focused," see also Nicolò Tommaseo and Bernardo Bellini, *Dizionario della lingua italiana* (Turin: Unione tipografico-editrice, 1865-1879). See also "field" in the OED: "The surface on which something is portrayed," "The surface of an escutcheon or shield on which the 'charge' is displayed," "The space or range within which objects are visible through an optical instrument [...]."

7. I am referring to "Spesso il male di vivere ho incontrato" ("Often I've Encountered Evil"), "In limine" ("On the Threshold"), and "I limoni" ("The Lemons"). On the "miracle" see also Romano Luperini, *Storia di Montale* (Bari: Laterza, 1992), 20. Montale's poetry contains several occurrences of the terms *telo* (cloth / canvas), *velo* (veil), and *veste* (dress) (plus *nome*, name, as the dress of identity), and terms belonging to the semantic range of "disclosing" (*schiudersi*) and "revealing" (*rivelare*). See e.g., Montale, "Ciò che di me sapeste," in *L'opera in versi*, 34: "[...] la scialbatura / la tonaca che riveste / la nostra umana ventura. / Era forse oltre il telo / l'azzurro tranquillo." For the English translation see: Montale, "What You Knew of Me," in *Collected Poems*, 49: "[...] a coat of paint / the veil that clothes / our human fate. / And maybe behind the canvas / was the still blue."

8. Montale, *L'opera in versi*, 138; *Collected Poems*, 197.

9. The theme of the distortion of the image and of memory is already frequent in *Cuttlefish Bones*. The only other occurrence of the term *schermo* in Montale's verse oeuvre is in "Gli elefanti" (1975), in *Quaderno di quattro anni*, in *L'opera in versi*, 571. There, although rather obscure, the meaning initially seems less metaphorical and more explicitly related to a spectacular situation: some jokers appear on the screen to make the crowd laugh, who soon forget that they have just witnessed the sad scene of a baby elephant's burial.

10. Eugenio Montale, "Espresso sul cinema," *Solaria* 2, no. 3 (1927): 55-59, 57: "Rather than opinions, one would say effusions." Unless otherwise indicated, and if English editions of the works do not exist, translations are my own.

11. That was his answer to the question, "If you were given the absolute power to decree one thing, what would it be?"

12. Quoted in Gian Piero Brunetta, *Gli intellettuali italiani e il cinema* (Milan: B. Mondadori, 2004), 113. Although the primary source is not stated, the quotation is credible; see e.g., Eugenio Montale, "Un film nero può portare un uomo debole al delitto," *Corriere della Sera* (11 September 1960), reprinted in *Il secondo mestiere. Prose 1920–1979* (Milan: Mondadori, 1996), 2313-2317.

13. Eugenio Montale, "Cinema e libertà," *Corriere della Sera* (13 September 1962), reprinted in *Il secondo mestiere*, 2476-2480, 2479. The author quotes and endorses the comments in Enrico Fulchignoni's speech at the Cini Foundation's "Cinema and liberty" conference. Remarks on the mimicry of cinema can often be found in his journalistic reports on the Cini Foundation conferences.

14. Montale, "Espresso sul cinema," 59. E.g., it is curious how he strongly insists on the presumed difficulty of the comedy of Charlie Chaplin, whom he defends as a complex, "inaccessible" artist. See *Ibid.*, 57.

15. "According the Oxford English Dictionary, the English word 'screen' probably derives from the Old French *escran* in its Old North French variant *escren*. The first documented occurrence of *escran* dates from 1318, in the meaning of a screen against heat [...]." Quoted from: Wanda Strauven, "Early Cinema's Touch(able) Screens: From Uncle Josh to Ali Barbouyou," *NECSUS* 1, no. 2 (2012): 163.

16. Gianfranco Contini, "Un nodo della cultura medievale: la serie *Roman de la Rose – Fiore – Divina Commedia*," in *Un'idea di Dante. Saggi danteschi* (Turin: Einaudi, 1976), 271.

17. The rules of courtly love were codified in Andreas Capellanus's *De amore* in the second half of the 12th century. See rule XIII, *De amore* (Milan: Guanda, 1980), 282: *Amor raro consuevit durare vulgatus*. Translation: "When made public, love rarely endures": Andreas Capellanus, *The Art of Courtly Love*, trans. John Jay Parry (New York: Columbia University Press, 1960), 185. See also *De amore*, 120; a passage partially cited by Domenico De Robertis in his edition of *Vita Nuova* (Milan: Ricciardi, 1980), 47: *Aliae igitur dominae nil mihi possunt ex debito postulare, nisi ut vestrae contemplationis intuitu mea sibi debeam beneplacita largiri obsequia et obsequiorum originem cauto reticere silentio; vobis autem tantum debiti obligatione constringor in cunctis laudabilia meis actibus operari et nullius improbitatis macula vitiari*. Translation: "Therefore the other ladies can ask me nothing as their due except that, with an eye to your contemplation, I grant them such services as are acceptable to them and that I keep discreetly silent as to the source of these services; but by the obligation I owe you I am bound to be worthy of praise in all that I do and to avoid all stain of depravity": Capellanus, *The Art of Courtly Love*, 97.

18. Dante Alighieri, *Vita Nova*, V. 1-4. I follow Michele Barbi's chapter division, *La Vita Nuova* (Florence: Soc. Dantesca Italiana, 1907). Dante Alighieri, *Vita Nova*, trans. and annotated by Andrew Frisardi (Evanston, IL: Northwestern University Press, 2012), 6-7.

19. "Linea retta" and "terminare" are terms used also by Albertus Magnus. See "Giving up Simulacra: The *Vita nuova*" in Suzanne Conklin Akbari, *Seeing through the Veil: Optical Theory and Medieval Allegory* (Toronto: University of Toronto Press, 2004), 116-125.

20. Marco Santagata, *Amate e amanti. Figure della lirica amorosa tra Dante e Petrarca* (Bologna: Il mulino, 1999), 9. On the "lady of the miracle" see 13-61.

21. Dante, *Vita Nova*, IX. 6. The *Vita Nova* translation by Andrew Frisardi uses the term "fiction." See Frisardi, trans., *Vita Nova*, 10.

22. Dante, *Vita Nova*, XII. 3. Frisardi, trans., *Vita Nova*, 12.

23. See Frisardi, trans., *Vita Nova*, 151.

24. Dante, *Inferno*, Canto 15. 4-9.

25. Strauven, "Early Cinema's Touch(able) Screens," 166.

26. Homer, *Iliad*, 18. 464-467. Homer, *The Iliad*, trans. Robert Fagles (New York: Penguin, 1990), 482: "If only I could hide him away from pain and death [...] as surely as glorious armor shall be his."

27. Fagles, trans., *The Iliad*, 483.

28. Umberto Eco, *The Infinity of Lists* (Milan: Rizzoli, 2009), 11.

29. Andrew S. Becker, *The Shield of Achilles and the Poetics of Ekphrasis* (Lanham: Rowman & Littlefield, 1995), 4-7.

30. Christian Metz, *L'Énonciation impersonnelle, ou, le site du film* (Paris: Méridiens Klincksieck, 1991).

31. Samuel Edgerton, *The Renaissance Rediscovery of Linear Perspective* (New York: Basic Books, 1975). I am obviously referring to the theories of Jean-Louis Baudry and Jean-Louis Comolli.

32. P.R. Hardie, "Imago Mundi: Cosmological and Ideological Aspects of the Shield of Achilles," *The Journal of Hellenic Studies* 105 (1985): 11-31. See also Gotthold E. Lessing, *Laocoon: An Essay on the Limits of Painting and Poetry* (London: Longman, 1853), 245: "Homer made his shield an epitome of everything that happens in the world."

33. Homer, *Iliad*, 18. 466-467. Fagles, trans., *The Iliad*, 482. The *thauma idesthai* (a marvel to behold) trope is typically connected to the sight of the shield: on the pseudo-Hesiodic *Shield of Herakles*, see Becker, *The Shield of Achilles*, 23-40.

34. Wanda Strauven, "The Observer's Dilemma: To Touch or Not to Touch," in *Media Archaeology: Approaches, Applications, and Implications*, eds. Erkki Huhtamo and Jussi Parikka (Berkeley: University of California Press, 2011), 158. See also Strauven, "Early Cinema's Touch(able) Screens," 165-166.

35. Jean-Louis Baudry, "Le dispositif: Approches métapsychologiques de l'impression de réalité," *Communications* 23 (1975): 56-72, reprinted in *L'effet cinéma* (Paris: Albatros, 1978), 27-49.

36. Plato, *Respublica*, VII. 515a-b.

37. "Screen(s)" is used in most English editions, but it is "partitions" in Allan Bloom's translation, *The Republic of Plato* (New York: Basic Books, 1968). It is *parapetti* (parapets), for example, in Mario Vegetti's Italian translation, *La Repubblica* (Naples: Bibliopolis, 1998).

38. Although that may be a choice dictated by a forced interpretation, see Plato, *Republic: The Greek Text, vol. 3: Notes*, eds. Lewis Campbell and Benjamin Jowett (Oxford: The Clarendon Press, 1894), 315.

39. See Baudry, "Le dispositif," 33.

40. Teresa de Lauretis, *Alice Doesn't: Feminism, Semiotics, Cinema* (Bloomington: Indiana University Press, 1984), 134.

41. Jean-Pierre Vernant, "Death in the Eyes: Gorgo, Figure of the *Other*," in *Mortals and Immortals: Collected Essays* (Princeton: Princeton University Press, 1991), 137. The head of Medusa (*gorgoneion*), as it is well-known, is also a typical decoration of Greek shields (e.g., Agamemnon's shield in the *Iliad*).

42. Jean-Pierre Vernant, "Death with Two Faces," in *Reading the Odyssey: Selected Interpretive Essays*, ed. Seth L. Schein (Princeton: Princeton University Press, 1996), 60.

43. Siegfried Kracauer, *Theory of Film: The Redemption of Physical Reality* (New York: Oxford University Press, 1960), 305-306.

44. Georges Didi-Huberman, *Images in Spite of All: Four Photographs from Auschwitz* (Chicago: University of Chicago Press, 2008), 177-179; Miriam B. Hansen, *Cinema and Experience: Siegfried Kracauer, Walter Benjamin and Theodor W. Adorno* (Berkeley: University of California Press, 2012), 257, 277. Another classic text on the subject, where Caravaggio's head of Medusa is analyzed as a metaphor for the apparatus of enunciation and representation (of painting), actually discusses anamorphic deformation about Athena's shield: see Louis Marin, *Détruire la peinture* (Paris: Galilée, 1977), 134-170.

45. Marcel Proust, *Remembrance of Things Past*, vol. 1 (New York: Random House, 1932), 814, quoted in Kracauer, *Theory of Film*, 14.

46. Kracauer, *Theory of Film*, xi. The observation about the "aura" is discussed in Hansen, *Cinema and Experience*, 21.

47. Even though it is actually an iconoclastic text (dated 824) that refers to the veneration of icons in churches. See Peter Galadza, "The Role of Icons in Byzantine Worship," *Studia Liturgica* 21 (1991): 118. However, the veneration of icons begins outside of worship and outside of the church – indeed "as late as the fourteenth century an *eikonostasion* is still usually only a stand with icons to be venerated privately in one's home" (*ibid.*, 119). See also Christopher Walter, "A New Look at the Byzantine Sanctuary Barrier," *Revue des études byzantines* 51 (1993): 203-228; A.W. Epstein, "The Middle Byzantine Sanctuary Barrier: Templon or Iconostasis?," *Journal of the British Archaeological Association* 134 (1981): 1-28.

48. Nicholas P. Constas, "Symeon of Thessalonike and the Theology of the Icon Screen," in *Thresholds of the Sacred: Architectural, Art, Historical, Liturgical, and Theological Perspectives on Religious Screens, East and West*, ed. Sharon E.J. Gerstel (Washington: Dumbarton Oaks, 2006), 163-183.

49. On the semiotic nature of icons and their ontological aspect see also Boris A. Uspenskij, *The Semiotics of the Russian Icon* (Lisse: Peter de Ridder Press, 1976), 10, 21.

50. Pavel A. Florensky, *Iconostasis* (Crestwood, NY: St. Vladimir's Seminary Press, 1996), 62-63. See also Constas, "The Theology of the Icon Screen," 179: "[...] because when these [veils] are removed, there is "nothing" there, nothing, that is, which

can be given to human comprehension." The "nothing," as that which is beyond predication, may again remind us of Montale's "nothing," as we have interpreted it.

51. Constas, "The Theology of the Icon Screen," 169. The "veils" are *parapetasmata*.

52. Gian Piero Brunetta, *Il viaggio dell'icononauta. Dalla camera oscura di Leonardo alla luce dei Lumière* (Venice: Marsilio, 2009), 14.

53. Antonello Gerbi, "Iniziazione alle delizie del cinema," in *Preferisco Charlot. Scritti sul cinema (1926–1933)*, eds. Gian Piero Brunetta and Sandro Gerbi (Savigliano: Aragno, 2011), 41, first published in *Il Convegno* 7, no. 11-12 (25 November - 25 December 1926): 836-848. Montale's reference (to "effusions," cited above) seems primarily to the previous "Teorie sul Cinema (A proposito di un 'Cahier du Mois')," first published in *Il Convegno* 7, no. 10 (25 October 1926): 766-781.

54. Jean-Jacques Meusy, "La Polyvision, espoir oublié d'un cinéma nouveau," *1895* 31 (2000): 153-211, and note 5.

55. See André Chastel, *Histoire du retable italien. Des origines à 1500* (Paris: Editions Liana Levi, 2005).

56. Galadza, "The Role of Icons in Byzantine Worship," 120.

57. Christian Jacob, *The Sovereign Map: Theoretical Approaches in Cartography throughout History* (Chicago: The University of Chicago Press, 2006), 11: "The map is not an object but a function."

58. Fredric Jameson, *The Geopolitical Aesthetic: Cinema and Space in the World System* (Bloomington: Indiana University Press, 1991), 9-84.

59. Francesco Casetti, *The Lumière Galaxy: Seven Key Words for the Cinema to Come* (New York: Columbia University Press, 2015), 155-178.

60. On New Hollywood hyperrealism see Franco La Polla, *Il nuovo cinema americano (1967–1975)* (Venice: Marsilio, 1978), 163-187.

Archaic Paradigms of the Screen and Its Images

1. Paul Valéry, "The Centenary of Photography," in *Classic Essays on Photography*, ed. Alan Trachtenberg (New Haven: Leete's Island Books, [1939] 1980), 197.

2. Plato, *Republic*, Book 7, trans. Benjamin Jowett (New York, London, Toronto, Sydney: Simon & Schuster Paperbacks, 2010), 302.

3. Marcel Proust, *Swann's Way*, trans. Lydia Davis (New York: Penguin Books, 2003), 18.

4. Plato, *Republic*, 298.

5. Dominique Païni, "Faut-il en finir avec la projection?," in *Projections, les transports de l'image,* exhibition catalogue, Le Fresnoye (Tourcoing, France: Hazan / Le Fresnoy / AFAA, 1997), 163-165.

6. *Ibid.,* 165.

7. Pliny the Elder (Caius Plinius Secundus Maior), *Natural History*, IX, XXXV, trans. H. Rackman (Cambridge: Loeb Classical Library, 1952), 43.

8. Athenagoras of Athens, *A Plea for the Christians*, chapter 17, trans. B.P. Pratten, in *Ante-Nicene Fathers*, vol. 2, eds. Alexander Roberts, James Donaldson, and A. Cleveland Coxe (Buffalo, NY: Christian Literature Publishing Co., 1885).

9. Ovid, *Metamorphoses*, trans. Rolfe Humphries (Bloomington and Indianapolis: Indiana University Press, 1955), 71.

10. *Ibid.*

11. *Ibid.*, 106.

12. Siegfried Kracauer, *Theory of Film: The Redemption of Physical Reality* (Princeton: Princeton University Press, 1997), 305.

13. They described it as a dark living place or as very dark rooms. The term *camera obscura*, which can be translated as "dark room" only appeared in the 16th century. It refers to a totally closed room, in which a hole has been made (in one of the walls, a shutter, or in the roof) and through which an image from the outside, produced by the diffraction of the penetrating light, is projected onto the opposite surface.

14. One can once again note the protective function of the screen of the camera obscura, which also reminds us of Athena's polished shield.

15. Daniel Barbaro, *La practica della perspettiva* (Venice, Italy: C. & R. Borgominieri, 1568), chapter 5, 192.

16. Giambattista della Porta, "Book 17: Of Strange Glasses, Chapter VI: Other Operations of a Concave-Glass," in *Natural Magick*, trans. unknown (London: Thomas Young and Samuel Speed, 1658), accessed October 9, 2012, http://www.mindserpent.com/American_History/books/Porta/jportac17.html#bk17VI.

17. Raymond Bellour, *Le corps du cinéma* (Paris: P.O.L, 2009), 40.

18. *Ibid.*

19. Max Milner, *La fantasmagorie* (Paris: Presses Universitaires de France, 1982), 23.

20. Victor de Moléon, "Fantasmagorie," in *Dictionnaire de la conversation et de la lecture*, book 26 (Paris: Belin-Mandar, 1836), 296-297.

21. Some phantasmagoria operators did not hesitate to electrocute their audience with electric shocks and to drug them by spreading opium fumes throughout the room.

22. The progressive invisibility of the mechanical projection device characterizes the evolution of optical spectacles, from the first magic lantern performances created by Athanasius Kircher in the 17th century to the optical theater of Emile Reynaud (1888).

23. August Strindberg, *Tschandala: A Novella*, trans. Peter Graves (Chester Springs, PA: Dufour Editions Inc., 2007), 121-132.

24. Victor Fournel, "L'odyssée d'un flâneur dans les rues de Paris," in *Ce qu'on voit dans les rues de Paris* (Paris: Adolphe Delahays, 1858), 262 and 269.

25. Charles Baudelaire, *The Painter of Modern Life and Other Essays*, trans. Jonathan Mayne (London: Phaidon Press, 1995), 9.

26. Stanley Cavell, *The World Viewed: Reflections on the Ontology of Film* (Cambridge, MA and London: Harvard University Press, 1971), 40-41.

27. Victor Hugo, "Letter to His Daughter, Adèle, August 22, 1837," in *En voyage, France et Belgique* (Paris: Hetzel, Maison Quantin, 1892), 118.

28. Émile Zola, *The Ladies' Paradise*, trans. Brian Nelson (Oxford: Oxford University Press, 1998), 15-16.

29. Auguste Villiers de l'Isle-Adam, *Tomorrow's Eve*, trans. Robert Martin Adams (Urbana, Chicago, London: University of Illinois Press, 2001), 117.

30. Jules Verne, *The Castle of the Carpathians* (Akron, OH: The Saalfield Publishing Company, 1900), 209.

31. Eugène Mouton (Mérinos), "L'historioscope," *La Revue politique et littéraire*, no. 14 (April 8, 1882): 426-427 [translated by Marie-Noëlle Dumaz].

32. Paul Valéry, "The Conquest of Ubiquity," in *The Collected Works of Paul Valéry. Aesthetics*, vol. 13, trans. Ralph Manheim, ed. Jackson Mathews (New York: Pantheon Books, 1964), 225-226.

33. *Ibid.*

34. Didier de Chouzy, *Ignis* (Paris: Berger-Levrault, 1883), 253.

35. *Ibid.*, 255.

36. Albert Robida, *The Twentieth Century*, trans. Philippe Willems, ed. Arthur B. Evans (Middletown, CT: Wesleyan University Press, 2004), 52-53.

37. Octave Uzanne, "The End of Books," illustrations by A. Robida, *Scribner's Magazine* 16 (1894): 228.

38. *Ibid.*, 229-230.

39. Camille Flammarion, *La fin du monde* (Paris: Ernest Flammarion, 1894), 282-283.

Thematizing the "Arche-Screen" through Its Variations

1. I would like to thank deeply Erica Nijhuis, who generously agreed to support my theoretical hypotheses with her classical philologist's rigorous and subtle competence.

2. Jean-François Lyotard, "Acinema," *Wide Angle* 2, no. 3 (1978): 57. Originally published in *Revue d'esthétique* 26, no. 2-4 (1973): 357-369; republished in *Des dispositifs pulsionnels* (Paris: Union Générale d'Éditions, 1973 and Galilée, 1994), resp. 53-69, 57-69. As it is known, "the libidinal cathexis" means the investment of our libido.

3. Published in 1971 under the title "Psychanalyse et peinture," in *Encyclopedia Universalis*, vol. 13 (Paris: Encyclopaedia Universalis, 1971), 745-750, and later as "Freud selon Cézanne," in *Des dispositifs pulsionnels*, 71-94. No existing translation in English.

4. Jean-François Lyotard, "Painting and Desire," in *Écrits sur l'art contemporain et les artistes / Writings on Contemporary Art and Artists. Miscellaneous Texts I: Aesthetics and Theory of Art*, vol. 4a, trans. Vlad Ionescu, Erica Harris, and Peter W. Milne, ed. and introd. Herman Parret (Leuven: Leuven University Press, [1972] 2011), 53.

5. Leon Battista Alberti, *On Painting and On Sculpture: The Latin Texts of De Pictura and De Statua*, trans. Cecil Grayson (London: Phaidon, 1972), Book One, §19, 55 [my italics].

6. Martin Jay, "Scopic Regimes of Modernity," in *Vision and Visuality*, ed. Hal Foster (Seattle: Bay Press, 1988), 4.

7. For this characterization of the window, see first of all Gérard Wajcman, *Fenêtre: Chroniques du regard et de l'intime* (Lagrasse: Verdier, 2004). See also Anne Friedberg, *The Virtual Window: From Alberti to Microsoft* (Cambridge, MA: MIT Press, 2006), and Louise Charbonnier, *Cadre et regard: Généalogie d'un dispositif* (Paris: L'Harmattan, 2007), particularly the chapter entitled "Cadre et fenêtre, un dispositif pour la vision," 73ff.

8. Lev Manovich, *The Language of New Media* (Cambridge, MA: MIT Press, 2000).

9. *Ibid.*, 99.

10. *Ibid.*

11. "I will use the term 'cultural interfaces' to describe human-computer-culture interface: the ways in which computers present and allow us to interact with cultural data" (*ibid.*, 80). In other terms, by "cultural interfaces" Manovich means the elements of mediation between the computer programming language and the cultural traditions of the users, who can interact with the computers themselves by those means only. The "window" metaphor is a typical example of such elements of mediation.

12. *Ibid.*, 88.

13. Daniel Arasse, *Histoires de peinture* (Paris: France Culture/Denoël, 2004), 63-64 [my italics].

14. *Ibid.*, 64.

15. Charbonnier, *Cadre et regard*, 30.

16. See Aeschylus, *Agamemnon*, line 117. On the same topic see also Euripides, *Heracles*, line 596.

17. "*Templum* is the same word as the Greek τέμενος, from τέμνω, to cut off, for *templum*, according to Servius (ad *Aen*. I.446), was any place which was circumscribed and separated by the augurs from the rest of the land by a certain solemn formula," William Smith, *A Dictionary of Greek and Roman Antiquities* (London: John Murray, 1875); reprinted by Cambridge University Press in 2013. Concerning the various meanings of the term *templum*, see Varro, *De Lingua Latina*, Book VII. §2.

18. See Iamblichus, *De Vita Pythagorica*, §71-73.

19. Maurice Merleau-Ponty, "Eye and Mind," in *The Merleau-Ponty Aesthetics Reader*, trans. Carleton Dallery, improved by Michael B. Smith, ed. Galen Johnson (Evanston: Northwestern University Press, 1993), 127; originally published as "L'Œil et l'Esprit," *Art de France* 1, no. 1 (1961). On "the increasing influence upon [Merleau-Ponty's] thinking of the discovery in 1940 of the Lascaux cave paintings," see Galen Johnson, "Sur la pluralité des arts, de Lascaux à aujourd'hui," in *L'Empreinte du visuel: Merleau-Ponty et les images aujourd'hui*, French trans. Stefan Kristensen, ed. Mauro Carbone (Geneva: MētisPresses, 2013), 43ff.

20. *Cave of Forgotten Dreams*, directed by Werner Herzog (Canada, USA, France, Germany, United Kingdom: Creative Differences, History Films, Ministère de la Culture et de la Communication, 2010).

21. Marc Azéma, *La Préhistoire du cinéma* (Arles: Errance, 2011), 21.

22. Bernard Stiegler, *La technique et le temps 3. Le temps du cinéma et la question du mal-être* (Paris: Galilée, 2001), 24 The notion of "arche-cinema" or "*consciousness cinema*" (*ibid.*) is based on the assumption that the nature of *consciousness* "is *already cinematographic*" (*ibid.*, 41): the Bergsonian echo of this latter expression is evident.

23. On the possible historical origins of the cave imagined by Plato, the classical essay by John Henry Wright is particularly interesting in the light of the topics discussed so far: John Henry Wright, "The Origin of Plato's Cave," in *Harvard Studies in Classical Philology*, vol. 17 (Cambridge, MA: Harvard Studies in Classical Philology, 1906), 131-142. Wright proceeds from the assumption according to which "it is hardly

possible that this picture originated in pure imagination, borrowing no suggestion whatever from without, though imagination must have had much to do in the development of it" (*ibid.*, 132). Wright then considers in particular a cave devoted to Pan and the Nymphs on the slopes of the Hymettus by the village of Vari (accurately explored in 1901 by the American archeologists), which presents many of the characteristics of Plato's own Cave (see *ibid.*, 140-141 for the description of the place). According to Aelianus and Olympiodorus (see *ibid.*, 141-142) Plato would have visited the cave as a child, with his parents. Although what has been found in this cave does not date back further than 600 BC, what Wright reports, quoting the account written by the archeologist in charge of the 1901 exploration of the cave, remains astonishing: "The raised platform, which is in many respects one of the most interesting features of the cave, [...] 'would have been a suitable place for the stately dances, possibly past the altar of Pan as portrayed in several of the reliefs. The darkness of the grotto with its flickering lights would have made such a worship weird and impressive in the highest degree'" (*ibid.*, 141).

24. See Plato, *Republic*, Book VII. 515a-b.

25. See *Ibid.*, 515b.

26. See *Ibid.*, 514b.

27. See *Ibid.*

28. See Henry Liddell, Robert Scott, and Henry Stuart Jones, *A Greek-English Lexicon* (Oxford: Clarendon Press, 1940), "παράφραγμα" and "φράσσω."

29. About the word "screen" consult the *The New Shorter Oxford English Dictionary*, ed. Lesley Brown (Oxford: Clarendon Press, 1973). For a synthesis of this and other decisive elements in the history of the word "screen," see Erkki Huhtamo, "Elements of Screenology: Toward an Archaeology of the Screen," in *Iconics: International Studies of Modern Image* 7 (2004): 31-82, as well as Francesco Casetti, "What Is a Screen Nowadays?," in *Public Space, Media Space*, eds. Chris Berry, Janet Harbord, and Rachel Moore (London: Palgrave MacMillan, 2013), 17ff.

30. See "παράφραγμα," in *A Greek-English Lexicon*.

31. Maurice Merleau-Ponty, *Phénoménologie de la perception* (Paris: Gallimard, 1945), or the English translation: Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Colin Smith (London: Routledge & Kegan Paul, 1962; revised 1981), 333.

32. Sigmund Freud, "Die Verneinung," *Imago* 11, no. 3 (1925); also translated into English: "Negation," in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, vol. 19, trans. James Strachey, ed. *James Strachey* (London: Hogarth Press, 1953-1974), 235.

33. Concerning this issue, a crucial reference is Pierre Hadot's book, *Le voile d'Isis. Essai sur l'histoire de l'idée de Nature* (Paris: Gallimard, 2004).

34. Immanuel Kant, *Critique of the Power of Judgment*, trans. Paul Guyer and Eric Matthews, ed. Paul Guyer (Cambridge: Cambridge University Press, [1790] 2000), 194, footnote.

35. "At Sais the seated statue of Athena, whom they consider to be Isis also, bore the following inscription: 'I am all that has been and will be; and no mortal has ever lifted my mantle'" (Plutarch, *De Iside et Osiride*, chapter 9. 354c, ed., introd., trans. and comm. John Gwyn Griffiths (Cardiff: University of Wales Press, 1970), 131.

36. *Ibid.*, 241 [chapter 77. 382c].

37. See *Ibid.*, 131 [chapter 9. 354c].

38. Maurice Merleau-Ponty, *Le visible et l'invisible*, ed. Claude Lefort (Paris: Gallimard, 1964). For the English translation see: *The Visible and the Invisible*, trans. Alfonso Lingis (Evanston: Northwestern University Press, 1968), 150.

39. I characterized this imagination as "Mnemosyne" in my book entitled *Proust et les idées sensibles* (Paris: Vrin, 2008). For the English translation see: *An Unprecedented Deformation: Marcel Proust and the Sensible Ideas*, trans. Niall Keane (Albany: SUNY Press, 2010), 66.

40. Leopardi employs the same verb "*mirare*" that was used by Alberti when he translated the verb *contueor* from the Latin version of his treatise *On Panting* into the vernacular. As we know, Arasse proposes to treat the meaning of this Latin verb as "to contemplate."

41. Vilém Flusser warns against the "dangerous anachronism" consisting in including the "prehistoric universe" in the "history of images." Indeed, in his opinion, one can properly speak of a "history of images" "only since linear texts appeared." See Vilém Flusser, *Into the Universe of Technical Images*, introd. Mark Poster, trans. Nancy Ann Roth (Minneapolis and London: University of Minnesota, [1985] 2011), 12-13.

42. Merleau-Ponty, "Eye and Mind," 126.

43. Kant, *Critique of the Power of Judgment*, 156.

44. Friedrich Nietzsche, "Die Fröhliche Wissenschaft," in *Sämtliche Werke, Kritische Studienausgabe* (KSA), vol. 3, eds. Giorgio Colli and Mazzino Montinari (Berlin: Walter de Gruyter, 1980). For the English version see: *The Gay Science: With a Prelude in German Rhymes and an Appendix of Songs*, trans. Josefine Nauckhoff, ed. Bernard Williams (Cambridge: Cambridge University Press, 2001), 8.

45. Maurice Merleau-Ponty, *Signes* (Paris: Gallimard, 1960). For the English version see: *Signs*, trans. Richard C. McCleary (Evanston: Northwestern University Press, 1964), 20-21. On this sentence and its consequences, see my book *La chair des images: Merleau-Ponty entre peinture et cinéma* (Paris: Vrin, 2011). For the English version see: *The Flesh of Images: Merleau-Ponty between Painting and Cinema*, trans. Marta Nijhuis (Albany: SUNY Press, 2015), 3ff.

46. See, for instance, once again Lev Manovich: "With VR, the screen disappears altogether" (Manovich, *The Language of New Media*, 101).

The Stuff of Screens

1. See for instance the introduction to and field covered by Nanna Verhoeff, *Mobile Screens: The Visual Regime of Navigation* (Amsterdam: Amsterdam University Press, 2012).

2. Theories of the viewer's relationship to the cinema screen in the 1970s were strongly influenced by Jacques Lacan's discussion of "the mirror phase" in child development. See for instance the work of Christian Metz and Laura Mulvey.

3. Deac Rossell, "Ottomar Anschütz," *Who's Who of Victorian Cinema*, http://www.victorian-cinema.net/anschutz.php.

4. See Stephen Herbert, "screens" entry, in *Encyclopedia of the Magic Lantern* (London: The Magic Lantern Society, 2001), 275.

5. Robert Paul's nightly program at the Alhambra in London in 1896 was projected from behind the screen, according to Carl Hertz, who bought and removed his projector from the stage. See Carl Hertz, *A Modern Mystery Merchant: The Trials, Tricks, and Travels of Carl Hertz* (London: Hutchinson & Co., 1924).

6. Seen by an audience of between 5,000 and 25,000 every evening, according to Tom Gunning, speaking at the symposium, Early Cinema and the Avant-Garde, Stadtkino Vienna, March, 8-13, 2002, text online at http://www.sixpackfilm.com/archive/veranstaltung/festivals/earlycinema/symposion/symposion_gunning.html.

7. Limelight resulted from pieces of calcium oxide, or lime, being heated by a flame of hydrogen and oxygen gas. Introduced in 1838, after various military and educational uses, this became the high-performance illuminant of choice for lantern shows and early moving picture shows until the early 20th century. See "limelight" entry, in *Encyclopedia of the Magic Lantern*, 174. The Royal Polytechnic screen in London in 1843 was specified as 648 ft square, or some 25 x 25 ft.

8. David Robinson, *From Peep-Show to Palace: The Birth of American Film* (New York: Columbia University Press, 1996), 63.

9. William Paul, "screens" entry, in *Encyclopedia of Early Cinema*, ed. Richard Abel (Abingdon, UK: Routledge, 2005), 573.

10. *Moving Picture World*, 1909, quoted in Paul, *Encyclopedia of Early Cinema*, 574.

11. Paul, *Ibid.*, 575, quoting J. Stuart Blackton, Vitagraph's co-founder.

12. Rachael Low, pioneer historian of British cinema, discussed this briefly in vol. 2 of her *History of the British Film* (London: George Allen & Unwin, 1948). She concluded that "daylight projection" was attempted mainly to counter the reputation of darkened cinemas for encouraging "immorality" (15).

13. A *Wikipedia* entry for "Silver Screen" (https://en.wikipedia.org/wiki/Silver_screen) claims that these were "popular in the early years of the motion picture industry and [the phrase] passed into popular usage as a metonym for the cinema industry." The *OneLook dictionary* website does indeed list twenty-six dictionaries that all refer to "early silver screens," http://www.onelook.com/?loc=rescb&refclue=cinema&w=silver+screen. However, the *Wikipedia* entry also carries a warning that "This article needs additional citations for verification," having in fact no relevant sources quoted.

14. *International Projectionist* (January-December, 1951): 22.

15. A review from the American *Everybody's Magazine* 37 (1917), notes: "Instead of having a silver screen, like a regular motion-picture theatre, the screen is made of paper [...]."

16. Andrew Robinson, "Every Picture Tells a Story," *Harkness Screens*, http://www.harkness-screens.com/pdfs/publications/Every-Picture-Tells-A-Story.pdf.

17. Samantha Holland, paraphrasing Andrew Robinson, "Every Picture Tells a Story." Smoking began to be restricted in cinema in the 1970s, and was banned in various cinema chains during the 1980s, before being suppressed by law in the early 2000s. See Samantha Holland, "History of Projection Screens," ed. Otto Tromm, *Projectionscreen.net*, http://www.projectionscreen.net/history/.

18. Sergei Eisenstein, "The Dynamic Square," in *Film Essays*, trans. and ed. Jay Leyda (New York: Praeger, 1970).

19. On the short-lived boom in Hollywood 3D production, see my chapter, "Will the 3D Revolution Happen?," in *Technē/Technology*, ed. Annie van den Oever (Amsterdam: Amsterdam University Press, 2014); also Miriam Ross, *3D Cinema: Optical Illusions and Tactile Experiences* (London: Palgrave Macmillan, 2015).

20. See the first full translation by Sergei Levchin of Eisenstein's article: "On Stereocinema," *Public* 47 (Spring 2013): 20-59. An extract previously appeared in Sergei Eisenstein, *Notes of a Film Director*, ed. Richard Griffith (New York: Dover Publications, 1970). See also my chapter, "Will the 3D Revolution Happen?"

21. See, for instance PSM's "pro-white" screen: "The three-layer technology consists of a smooth polyester front side, a central rubberised core and cotton backing. Its matt white surface makes it perfect for a wide range of applications, having a wide optimal viewing angle." See PSM online: http://www.projector-screen-material.co.uk/products.

22. The first Panorama was opened by the Irish-born Robert Barker in Edinburgh in 1792, followed by another in London's Leicester Square in 1793. For the history of the Panorama, see Ralph Hyde, *Panoramania* (London: Trefoil/Barbican Art Gallery, 1988).

23. See Marshal McLuhan, *Understanding Media: The Extensions of Man* (Cambridge, MA: MIT Press, 1964; reprint 1994) and Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge, MA: MIT Press, 1999).

24. Dating the screen from its earliest appearance in the literature of the lantern in the 17th century with the pioneering work of Della Porta, Kircher, and Huygens.

Scaling Down: Cinerama on Blu-ray

1. Thanks to Ian Hartman for his research assistance and to Sarah Keller and audiences at the University of Pennsylvania and the University of Chicago for feedback on this research at various stages.

2. Hazard Reeves, "This Is Cinerama," *Film History* 11 (1999): 97.

3. For discussions of widescreen cinema's industrial context, see John Belton, *Widescreen Cinema* (Cambridge, MA: Harvard University Press, 1992); William Paul, "The Aesthetics of Emergence," *Film History* 5, no. 3 (1993): 321-355; and John Belton, Sheldon Hall, and Steve Neale, eds., *Widescreen Worldwide* (New Barnet, UK: John Libbey, 2010). For examples of this public discourse, see "Cinerama and Need to Bolster B. O. May Set Pix Off on Engineering Binge," *Variety*, November 5, 1952, 1; Thomas M. Pryor, "Hollywood Uproar," *New York Times*, February 8, 1953; and "Strictly for the Marbles," *Time*, June 8, 1953.

4. That inextricability is conveyed by the well-known illustration of the Cinerama system included in souvenir programs for the Cinerama films, which links the diagram of a Cinerama production to one of a Cinerama theater. *This Is Cinerama* souvenir programs, Cinerama (corporation) folder, New York Public Library for the Performing Arts, Lincoln Center (hereafter NYPLPA). Reprinted in Fred Waller, "The Archaeology of Cinerama," *Film History* 5, no. 3 (September 1993): 296.

5. One of the series of souvenir programs created for *This Is Cinerama*, for instance, asked, "What magic produces this sensation, this feeling of participation?" and explained, "Part of the answer is clearly visible in the theatre itself. Not only has the screen a new shape and dimension, but now there are three projection booths simultaneously throwing the image on the screen [...]. Also visible in the auditorium are loudspeakers along the sides and to the rear of the hall – part of a complicated, multi-channelled [*sic*] speaker system that augments the vivid realism of the Cinerama picture with an equally realistic sound." *This Is Cinerama* souvenir program, Cinerama (corporation) folder, NYPLPA.

6. Blu-ray produces images in high definition, a format that has threatened longstanding assumptions that film's resolution is superior to television's. See Amanda D. Lotz, *The Television Will Be Revolutionized*, 2nd ed. (New York: New York University Press, 2014), 86; Luke Stadel, "From 35mm to 1080p: Film, HDTV, and Image Quality in American Television," *Spectator* 32, no. 1 (Spring 2012): 31-36; Blu-ray Disc Association, "White Paper: Blu-ray Disc™ Format, General," 3rd ed. (December 2012): 1-46, accessed September 4, 2015, http://www.blu-raydisc.com/Assets/Downloadablefile/White_Paper_General_3rd_Dec%202012_20121210.pdf.

7. The discs can and have been projected theatrically as well; however, this is certainly not their primary use.

8. John Belton, "The Curved Screen," *Film History* 16, no. 3 (2004): 278, 284. On the size of the Cinerama screen see Ariel Rogers, *Cinematic Appeals: The Experience of New Movie Technologies* (New York: Columbia University Press, 2013), 241n44.

9. See, in particular, Mary Ann Doane, "The Close-Up: Scale and Detail in the Cinema," *differences: A Journal of Feminist Cultural Studies* 14, no. 3 (Fall 2003): 89-111; and Haidee Wasson, "The Networked Screen: Moving Images, Materiality, and the Aesthetics of Size," in *Fluid Screens, Expanded Cinema*, eds. Janine Marchessault and Susan Lord (Toronto: University of Toronto Press, 2007), 74-95.

10. Belton, *Widescreen Cinema*, 183-210; William Paul, "Screening Space: Architecture, Technology, and the Motion Picture Screen," *Michigan Quarterly Review* 35, no. 1 (Winter 1996): 143-173. David Bordwell, focusing on production, emphasizes continuity, arguing that widescreen was incorporated into the classical Hollywood style. David Bordwell, "Film Style and Technology, 1930-1960," in *The Classical Hollywood Cinema: Film Style & Mode of Production to 1960*, eds. David Bordwell, Janet Staiger, and Kristin Thompson (New York: Columbia University Press, 1985), 358-364.

11. See Laura Mulvey, *Death 24x a Second: Stillness and the Moving Image* (London: Reaktion, 2006); Barbara Klinger, *Beyond the Multiplex: Cinema, New Technologies, and the Home* (Berkeley: University of California Press, 2006); Caetlin Benson-Allott, *Killer Tapes and Shattered Screens: Video Spectatorship from VHS to File Sharing* (Berkeley: University of California Press, 2013); and Francesco Casetti, *The Lumière Galaxy: Seven Key Words for the Cinema to Come* (New York: Columbia University Press, 2015).

12. Haidee Wasson, introduction to "In Focus: Screen Technologies," *Cinema Journal* 51, no. 2 (Winter 2012): 143. Also see Erkki Huhtamo, "Elements of Screenology: Toward an Archaeology of the Screen," *Iconics: International Studies of the Modern Image* 7 (2004): 31-82.

13. Anne Friedberg, *The Virtual Window: From Alberti to Microsoft* (Cambridge, MA: MIT Press, 2006), 151. Also see Paul, "Screening Space," 144-150.

14. See, in particular, Erkki Huhtamo, "Encapsulated Bodies in Motion: Simulators and the Quest for Total Immersion," in *Critical Issues in Electronic Media*, ed. Simon Penny (Albany: State University of New York Press, 1995), 159-186; Lauren Rabinovitz, "More than the Movies: A History of Somatic Visual Culture through *Hale's Tours*, Imax, and Motion Simulation Rides," in *Memory Bytes: History, Technology, and Digital Culture*, eds. Lauren Rabinovitz and Abraham Geil (Durham, NC: Duke University Press, 2004), 99-125; Friedberg, *The Virtual Window*, 191-239; and Alison Griffiths, *Shivers Down Your Spine: Cinema, Museums, & the Immersive View* (New York: Columbia University Press, 2008).

15. On the screen's function as both a surface and a frame, see Friedberg, *The Virtual Window*, 1.

16. Belton, *Widescreen Cinema*, 99-100; Waller, "The Archaeology of Cinerama"; Reeves, "This Is Cinerama."

17. Waller, "The Archaeology of Cinerama," 289-290; Fred Waller, "Cinerama Goes to War," in *New Screen Techniques*, ed. Martin Quigley, Jr. (New York: Quigley Publishing Company, 1953), 119-120.

18. Waller, "The Archaeology of Cinerama," 296.

19. Five microphones were placed within the profilmic space. The sixth and seventh track usually corresponded to the left and right side speakers. In cases where the seventh track was aligned with the rear speakers, the sixth track was doubled and channeled to both the left and right side speakers. Scott Marshall, "Interview with Dr. Wentworth Fling, the Man Who Brought Cinerama out of the Laboratory," *Film History* 15, no. 1 (2003): 62.

20. Lynn Farnol, "Finding Customers for a Product," in *New Screen Techniques*, ed. Quigley, 143 [emphasis in original].

21. *This Is Cinerama* souvenir program, Cinerama (corporation) folder, NYPLPA.

22. *Ibid.*

23. Belton, *Widescreen Cinema*, 91-94; Griffiths, *Shivers Down Your Spine*, 94-98.

24. See Belton, *Widescreen Cinema*, 89-90.

25. Bosley Crowther, "New Movie Projection Shown Here; Giant Wide Angle Screen Utilized," *New York Times*, October 1, 1952. Articles in *American Cinematographer* also emphasized the system's capacity to convey "vastness" as well as its conduciveness to a "subjective approach" to cinematography. John W. Boyle, ASC, "And Now... CINERAMA," *American Cinematographer*, November 1952, 480; Joseph Brun, ASC, "The Cinerama Technique," *American Cinematographer*, June 1954, 302.

26. Wasson, "The Networked Screen," 85; Griffiths, *Shivers Down Your Spine*, 108.

27. Waller, "The Archaeology of Cinerama," 289-290.

28. Belton, *Widescreen Cinema*, 89-90; Rogers, *Cinematic Appeals*, 34-37, 53-60. Having seen the first two Cinerama films, François Truffaut, for one, objected vigorously to their combination of self-congratulation and American exceptionalism, describing "the systematic flattery of the 'dear audience,' the extremist demagogy, the intensive publicity, and the propaganda." He explained, "[w]hen we listen to friends coming back from a trip to the United States, we are shocked to hear their

remarks, offensive to a country that we judge through good movies and good novels: Cinerama – and this might be its only virtue – is precisely the same as a trip to the U.S.A., since we leave the theater feeling fiercely anti-American." François Truffaut, "Bad Circus and Low Propaganda," in *The Early Film Criticism of François Truffaut*, ed. Wheeler Winston Dixon (Bloomington: Indiana University Press, 1993), 29, 30.

29. Wasson, "The Networked Screen," 86-87.

30. Susan Stewart, *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection* (Durham, NC: Duke University Press, 1993), 70-71.

31. David Sterritt, "From the Curved Screen to the Flat Screen: Cinerama Adventures Galore!," *Cineaste* 39, no. 3 (Summer 2014): 39.

32. Belton, *Widescreen Cinema*, 98-99; Paul, "The Aesthetics of Emergence," 335-337; Belton, "The Curved Screen," 277-278; William Paul, "Breaking the Fourth Wall: 'Belascoism,' Modernism, and a 3-D *Kiss Me Kate*," *Film History* 16, no. 3 (2004): 234; Rogers, *Cinematic Appeals*, 30-31.

33. Tom Gunning, "Landscape and the Fantasy of Moving Pictures: Early Cinema's Phantom Rides," in *Cinema and Landscape: Film, Nation and Cultural Geography*, eds. Jonathan Rayner and Graeme Harper (Bristol, UK: Intellect, 2010), 38.

34. Stanley Cavell famously portrays screens as such. See Stanley Cavell, *The World Viewed: Reflections on the Ontology of the Cinema*, enlarged ed. (Cambridge, MA: Harvard University Press, 1979), 24.

35. The different functions I am attributing to the spectacles of grandeur and kinesis and the spectacles of performance are illuminated by the distinction John Belton makes between the "two dramatically different models of recreational participation" operable in widescreen cinema: the amusement park and the legitimate theater. Belton, *Widescreen Cinema*, 188.

36. Paul, "The Aesthetics of Emergence," 333-336.

37. Belton, *Widescreen Cinema*, 226.

38. Klinger, *Beyond the Multiplex*, 24. Also see Casetti, *The Lumière Galaxy*, 71-72.

39. "Remastering a Widescreen Classic: Before and after Demonstrations on the Film's Remastering," *This Is Cinerama*, DVD, directed by Merian C. Cooper et al. (Los Angeles, CA: Flicker Alley, 2012). We might note that these films would not originally have been shown at the Cinerama Dome, which was built in 1963. Belton, "The Curved Screen," 278.

40. This is not entirely new to the videos. As *Better Theatres* editor George Schutz observed in 1952 after watching *This Is Cinerama*, "a curved picture that is relatively wide, hence with considerable curvature, is invaded across the top by an oval 'ceiling.' Far from being objectionable when the audience was taken for an airplane ride across the country and over the western mountain ranges, this added to the realism of the journey, for the 'ceiling' became logically that of the front airplane cabin with the screen performing as its window. But the motion picture cannot insist upon looking at the world and life through an airplane window." George Schutz, "Cinerama and the Future," *Motion Picture Herald*, October 4, 1952, 19.

41. Friedberg, *The Virtual Window*, 1, 15-18. On metaphors for the screen also see Vivian Sobchack, *The Address of the Eye: A Phenomenology of Film Experience* (Princeton, NJ: Princeton University Press, 1992), 14-17.

42. Anne Friedberg, aligning the Cinerama image with the view through a windshield, notes that the widescreen revolution "coincided with the panorama of the 'wraparound' windshield." Anne Friedberg, "Urban Mobility and Cinematic Visuality: The Screens of Los Angeles – Endless Cinema or Private Telematics," *Journal of Visual Culture* 1, no. 2 (2002): 200, 201.

43. Casetti, *The Lumière Galaxy*, 9, 60-63.

44. Friedberg, *The Virtual Window*, 204.

45. Although anamorphic processes such as CinemaScope relied on a single projector, Marshall Deutelbaum argues that anamorphic widescreen films of the 1950s and 1960s also displayed graphic sectioning, in that case utilizing a quartered grid. Marshall Deutelbaum, "Basic Principles of Anamorphic Composition," *Film History* 15 (2003): 72-80.

46. Sterritt, "From the Curved Screen to the Flat Screen," 38; David Bordwell, "The Wayward Charms of Cinerama," *David Bordwell's website on cinema*, September 26, 2012, accessed September 5, 2015, http://www.davidbordwell.net/blog/2012/09/26/the-wayward-charms-of-cinerama.

47. On spatial montage see Lev Manovich, *The Language of New Media* (Cambridge, MA: MIT Press, 2001), 322-326.

48. See Friedberg, *The Virtual Window*, 191-239.

49. Beatriz Colomina, "Enclosed by Images: The Eameses' Multimedia Architecture," *Grey Room* 02 (Winter 2001): 6-29.

50. Huhtamo, "Encapsulated Bodies in Motion," 162.

51. This point is informed by Thomas Elsaesser's discussion of the ways in which contemporary 3D moves across platforms. 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, no. 2 (Winter 2013): 238.

The Disappearance of the Surface

1. Released a year before Avatar, the movie was aimed at promoting 3D technology while allowing theaters to equip themselves, ready for the release of what was already expected to be a global event.

2. Upon its release in France, the movie was only available in its full 2D version.

3. This process, if there is such a thing, certainly began with Jurassic Park (1993), a film constantly formulating the tactile – and therefore human – relationship that remains between men and their creatures, created artificially and already partially by computer. For example, one can quote the line by the character John Hammond: "I wanted to show them something that wasn't an illusion. Something that was real, something that they could see and touch."

4. Like in Jurassic Park, animatronics (articulated models) were used for the filming of certain scenes.

GoPro: Augmented Bodies, Somatic Images

1. Amanda Robles, *Alain Cavalier, filmeur* (Paris: De l'incience éditeur, 2011), 235.
2. See Luis W. Alvarez, "A Physicist Examines the Kennedy Assassination Film," *American Journal of Physics* 44, no 9 (1976): 813-827.
3. *Ibid.*, 227.
4. Alexandre Promio, "Carnet de route," in *Histoire du cinématographe*, ed. Guillaume-Michel Coissac (Paris: Cinéopse/Gauthier-Villars, 1925), 197 [my translation].
5. "You know what? It is the 8 mm. movie that will save us. It is coming. You may think I am crazy. But I know people, very talented people, shooting their movies on 8 mm. The day is close when the 8 mm. home-movie footage will be collected and appreciated as folk art, like songs and the lyric poetry that was created by the people. Blind as we are, it will take us a few more years to see it, but some people see it already. They see the beauty of the sunsets taken by a Bronx woman when she passed through the Arizona desert; travelogue footage, awkward footage that will suddenly sing with an unexpected rapture; the Brooklyn Bridge footage; the spring cherry blossoms footage; the Coney Island footage; the Orchard Street footage – time is laying a veil of poetry over them." Jonas Mekas, *Movie Journal: The Rise of the New American Cinema 1959-1971* (New York: Collier Books, 1972), 83.
6. Jérôme Sans, "Just Like a Shadow...," interview with Jonas Mekas, *Vilnius*, February 2000, http://www.culture.lt/vilnius/vilnius2001-1/094psl.htm.
7. Jérôme Sans, Morgan Boëdec, Léa Gauthier, *Entretiens avec Jonas Mekas*, vol. 24 (Paris: Les cahiers de Paris expérimental, 2006), 17 [my translation].
8. Johan van der Keuken, *Voyage à travers les tours d'une spirale. Les dossiers de la cinémathèque*, vol. 16 (Montreal: La Cinémathèque québécoise, 1986), 20.
9. "What separates GoPro from Flip is that all along, GoPro has sold consumers not on the camera, itself, but on something the smartphone can't easily replace: the experience of using the camera." Issie Lapowsky, "Why GoPro's Success Isn't Really about the Cameras," *Wired*, June 26, 2014, http://www.wired.com/2014/06/gopro/.
10. François Niney, "Being There," *Cahiers du cinéma* 465 (March 1993): 79.
11. Vincent Laforet, "The GoPro and Its Place in History," *Vincent Laforet*, September 30, 2014, http://blog.vincentlaforet.com/2014/09/30/the-gopro-its-place-in-history/.
12. From an online interview with the makers of *Leviathan*. See Laurent Rigoulet, "Sur la mer agitée de 'Leviathan' avec Lucien Castaing-Taylor et Verena Paravel, réalisateurs," *Telerama.fr*, August 28, 2013, http://www.telerama.fr/cinema/sur-la-mer-agitee-avec-lucien-castaing-taylor-et-verena-paravel-realisateurs-de-leviathan,101522.php [my translation].
13. Selmin Kara and Alanna Thain, "Sonic Ethnographies: Leviathan and New Materialisms in Documentary," in *Music and Sound in Documentary Film*, ed. Holly Rogers (New York: Routledge, 2015), 187.
14. Nick Paumgarten, "We Are a Camera: Experience and Memory in the Age of GoPro," *New Yorker*, September 22, 2014, http://www.newyorker.com/magazine/2014/09/22/camera.
15. *Ibid.*
16. *Ibid.*

17. Issie Lapowsky, "Why GoPro's Success...."
18. *Ibid.*

The Four Practices? Challenges for an Archaeology of the Screen

1. Erkki Huhtamo, "Elements of Screenology: Toward an Archaeology of the Screen," *Iconics: International Studies of the Modern Image* 7 (2004): 31-82.
2. Charles Musser, "Toward a History of Screen Practice," *Quarterly Review of Film Studies* 9, no. 1 (Winter 1984): 59-69; *The Emergence of Cinema: The American Screen to 1907. History of the American Cinema*, vol. 1 (Berkeley, LA and London: University of California Press, 1990). The first part of the first chapter in the latter has been taken almost verbatim from the 1984 article.
3. Erkki Huhtamo, "Toward a History of Peep Practice," in *A Companion to Early Cinema*, eds. André Gaudreault, Nicolas Dulac, Santiago Hidalgo (Chichester, West Sussex: Wiley-Blackwell, 2012), 32-51.
4. Félicien Trewey, *How It Is Done*, 1st ed. (Middlesborough and Newcastle: Jordison & Co, [1894]). Author's collection.
5. Erkki Huhtamo, *Illusions in Motion: Media Archaeology of the Moving Panorama and Related Spectacles* (Cambridge, MA: MIT Press, 2013).
6. Erkki Huhtamo, "Screen Tests: Why Do We Need an Archaeology of the Screen?," *Cinema Journal* 51, no. 2 (Winter 2012): 146-150.
7. Erkki Huhtamo, "Natural Magic: A Cultural History of Moving Images," in *The Routledge Companion to Film History*, ed. William Guynn (London and New York: Routledge, 2011), 3-15.
8. *Ibid.*, 11.
9. In some camera obscura models the scene from the outside is projected directly on the paper which has been put inside. In this case the paper takes the role of the screen.
10. Evidence of such practices is provided by the iconography of the camera obscura. See John H. Hammond, *Camera Obscura. A Chronicle* (Bristol: Adam Hilger Ltd., 1981). See also Fulgence Marion, *The Wonders of Optics*, trans. Charles W. Quin (New York: Charles Schribner, 1871), fig. 70 (after page 242). I have observed how the participants interact with the projected picture in surviving room camera obscuras such as the ones in Santa Monica, San Francisco, and Edinburgh. Ellen Zweig used the camera obscura at the Cliff House, San Francisco in her performance work *She Traveled for the Landscape* (1986). The audience was inside and the actors outside, while Zweig herself turned the lens and mirror combination. See Erkki Huhtamo, "Art in the Rear-View Mirror: The Media-Archaeological Tradition in Art," in *A Companion to Digital Art*, ed. Christiane Paul (Hoboken, NJ: John Wiley & Sons, 2016), 87.
11. Erkki Huhtamo, "'All the World's a Kaleidoscope.' A Media Archaeological Perspective to the Incubation Era of Media Culture," *Rivista di estetica*, Nuova series, no. 55, Anno LIV (2014): 139-153.
12. It was mainly used instrumentally to present two views one after another. Both were in their own stage openings. The auditorium first faced one and was then turned to

face the other. Creating an illusion of virtual traveling between the two scenes was not the main purpose. See Huhtamo, *Illusions in Motion*, 144.

13. The first Cosmorama was introduced in Paris in 1808 and the fashion soon spread elsewhere. The history of the Cosmorama will be excavated in Erkki Huhtamo's forthcoming book, tentatively entitled "Magical Devices."

14. See Walter Benjamin, *The Arcades Project*, ed. Rolf Tiedemann (New York: Belknap Press, 2002).

15. Erkki Huhtamo, "Messages on the Wall: An Archaeology of Public Media Displays," in *Urban Screens Reader. INC Reader #5*, eds. Scott McQuire, Meredith Martin, and Sabine Niederer (Amsterdam: Institute of Network Cultures, 2009), 15-28.

16. Scripted space is a concept coined by the Los Angeles-based cultural critic Norman M. Klein. See his *The Vatican to Vegas: A History of Special Effects* (New York: The New Press, 2004).

17. Erkki Huhtamo, "(Un)walking at the Fair: About Mobile Visualities at the Paris Universal Exposition of 1900," *The Journal of Visual Culture* 12, no. 1 (2013): 61-88.

18. For an early formulation, see a text written in 2004-2005, Erkki Huhtamo, "Pockets of Plenty. An Archaeology of Mobile Media," in *The Mobile Audience: Media Art and Mobile Technologies*, ed. Martin Rieser (Amsterdam and New York: Rodopi, 2011), 23-38.

19. Ericsson would have had to stop and connect the telephone with the telephone wires by means of two long sticks, according to John Meurling and Richard Jeans, *The Mobile Phone Book: The Invention of the Mobile Phone Industry* (London: Communications Week International on Behalf of Ericsson Radio System, 1994), 43. I found the reference to this source online: "Privateline.com: Mobile Telephone History," *Privateline.com*, accessed November 29, 2015, www.privateline.com/PCS/history.htm. Jason Farman accepts the story as factual and characterizes the invention, somewhat carelessly, as "the first mobile phone." Jason Farman, "Historicizing Mobile Media: Locating the Transformations of Embodied Space," in *The Mobile Media Reader*, eds. Noah Arceneaux and Anandam Kavoori (New York: Peter Lang, 2012), 15.

20. Michael Brian Schiffer, *The Portable Radio in American Life* (Tucson and London: The University of Arizona Press, 1991), 23, 28.

21. Frederick Siemens, "Radio on Your Motor Car," *Popular Radio* 2, no. 4 (December 1922): 246-253.

22. *Ibid.*, 251.

23. Google is working on an improved version – a kind of heads-up display – which seems targeted at professionals like medical doctors working in controlled environments rather than the general public. Emphasizing a rupture with the failed Google Glass project, the new effort is known as "Project Aura" (as of December 2015) and has been compared with a historical device, the monocle.

24. Erkki Huhtamo, "Elephans Photographicus: Media Archaeology and the History of Photography," in *Photography and Other Media in the Nineteenth Century*, eds. Simone Natale and Nicoletta Leonardi (University Park, PA: Penn State University Press, forthcoming).

25. A pair of dark shades to be used with prescription glass frames designed for Google

Glass were marketed under Furstenberg's brand to profit from this association.

26. The discussion on the dispositive, which was active within cinema studies in the 1970s and 1980s (as "apparatus theory") is undergoing a revival and revision. See François Albera, Maria Tortajada, and Franck Le Gac, "Questioning the Word 'Dispositif.' Note on the Translation," in *Cine-Dispositives: Essays in Epistemology Across Media*, eds. François Albera and Maria Tortajada (Amsterdam: Amsterdam University Press, 2015), 11-14; François Albera and Maria Tortajada, "The 1900 Episteme," in *Cinema Beyond Film: Media Epistemology in the Modern Era*, eds. François Albera and Maria Tortajada (Amsterdam: Amsterdam University Press, 2010), 25-44. I endorse Albera's and Tortajada's effort to translate the French *dispositif* as "dispositive" instead of using "apparatus" or "cinematic apparatus." Frank Kessler's paper "Notes on *Dispositif*" (2004-2007), which is available in different versions on the Internet, is useful as an excavation of the concept and its etymology.

27. Carlene E. Stephens, *On Time: How America Has Learned to Live by the Clock* (Boston, NY and London: Bulfinch Press / Smithsonian Institution, 2002), 129-135. Stephens writes that "as late as 1943, wristwatches were still sometimes called 'bracelet watches' or 'wristlets,' recalling feminine jewelry" (135). A different, more fragmentary story is told by Eric Bruton, *The History of Clocks and Watches* (New York: Crescent Books, 1979, 183, 198-203) emphasizing the context of mass production.

28. Nancy Winters, *Man Flies: The Story of Alberto Santos-Dumont Master of the Balloon* (Hopewell, NJ: The Ecco Press, 1997), 52, 113-119. Stephens does not mention in *On Time* the Cartier & Santos-Dumont episode, but includes a 1918 picture of an aerial photographer in an airplane wearing a wristwatch (Stephens, *On Time*, 134).

29. Huhtamo, "Pockets of Plenty. An Archaeology of Mobile Media," 23-38.

30. Erkki Huhtamo, "Dismantling the Fairy Engine: Media Archaeology as Topos Study," in *Media Archaeology: Approaches, Applications, and Implications*, eds. Erkki Huhtamo and Jussi Parikka (Berkeley: University of California Press, 2011), 27-47.

Screens in the City

1. This essay is a revised version of my earlier essay "Mobile Media Architecture: Between Infrastructure, Interface, and Intervention," published in "Media City: Spectacular, Ordinary and Contested Spaces," Special issue, *Observatorio (OBS*)* (November 2015): 73-84.

2. For more information about the two screen projects see: "The Bridge – Nederland-Zweden 2014," *Dropstuff.nl*, www.dropstuff.nl/project/the-bridge-nederland-zweden-2014; and "Projects: Koopgoot," *Plustouch*, 2013, www.plustouch.nl/projects.

3. Anne Friedberg, *The Virtual Window: From Alberti to Microsoft* (Cambridge, MA: MIT Press, 2006), 150.

4. *Ibid.*, 149. The quote is taken from Auguste Perret, *Contribution à une théorie de l'architecture* (Paris: André Wahl, 1952). About virtual mobility, see also Friedberg's earlier work, *Window Shopping: Cinema and the Postmodern* (Berkeley: University of California Press, 1994).

5. Scott McQuire, *The Media City: Media, Architecture and Urban Space* (London: SAGE, 2008).

6. Michel de Certeau, *The Practice of Everyday Life*, trans. Steven Rendall (Berkeley: University of California Press, 1984), 98.

7. Other mentionable works after De Certeau are: Francesco Careri, *Walkscapes: Walking as an Aesthetic Practice* (Barcelona: Editorial Gustavo Gili, S.L., 2002), or more recently, Karen O'Rourke, *Walking and Mapping: Artists as Cartographers* (Cambridge, MA: MIT Press, 2013).

8. The performativity of architecture, and what has been termed performative architecture, has been taken up in architecture theory as well as urban and spatial design. For this understanding of architecture, see for example Kolarevic Branco and Ali Malkawi, eds., *Performative Architecture: Beyond Instrumentality* (New York: Spon Press, 2005), and Sam Spurr, "Performative Architecture: Design Strategies for Living Bodies" (PhD Thesis, School of English, Media and Performance Arts, University of New South Wales, 2007). In her recent dissertation on nomadic theater, Liesbeth Groot Nibbelink theoretically expands the notion of performative architecture from the perspective of staging and scenography. Liesbeth Groot Nibbelink, "Nomadic Theatre: Staging Movement and Mobility in Contemporary Performance" (PhD thesis, Media and Performance Studies, Utrecht University, 2015).

9. Anne Balsamo defines public interactives as emergent forms of interactive screens and other media forms in public space, designed to engage people in conversations with digital media for the purposes of information exchange, education, entertainment, and cultural memory. See Anne Balsamo, *Designing Culture: The Technological Imagination at Work* (Durham, NC: Duke University Press, 2011).

10. For a fuller discussion of the meanings of "inter," see Mieke Bal's essay on what she calls inter-ships. Mieke Bal, "Imaging Madness: Inter-ships," *InPrint* 2, no. 1 (2013): 51-70, http://arrow.dit.ie/inp/vol2/iss1/5. For a more general analysis of the politics of public space, see Rosalyn Deutsche, *Evictions: Art and Spatial Politics* (Cambridge, MA: MIT Press, 1996). About "interventions," "interventionists," and art and activism in public space, see for example Cher Krause, *Public Art: Theory, Practice and Populism* (Oxford: Blackwell Publishing, 2008); Robert Klanten and Matthias Huebner, eds., *Urban Interventions: Personal Projects in Public Spaces* (Berlin and London: Gestalten, 2010); and Gregor Sholette and Nato Thompson, eds. *The Interventionists: User's Manual for the Creative Disruption of Everyday Life* (Cambridge, MA: MIT Press, 2004).

11. The growing *Media Architecture Compendium*, based on research by the Media Architecture Institute at Aarhus University and works from the Media Architecture Biennale states: "Media Architecture grows at the intersection of physical and digital space, it is also the combination of art and technology, a fusion of architecture, communication, public art, urban science, sociology, economics, as wel as LED technology, internet technology, interactive technology, intelligent control, computer science and other fields and disciplines." For a distinction between urban screens, media facades, and media architecture, see the section "Media Architecture." Martin Brynskov, Morten Lervig and Gernot Tscherteu, eds., *Media Architecture Compendium*, 2014, http://catalog.mediaarchitecture.org/#main.

12. This brings us back to Anne Friedberg's discussion of the twin paradoxes of mobility/immobility and materiality/immateriality that characterizes for her the specificity of

the screen-based *dispositifs* she argues in *Window Shopping* and *The Virtual Window*.

13. Matthew Claudel, "Beyond 'Things That Flicker': The Next Step for Media Architecture," *ArchDaily*, October 9, 2014, http://www.archdaily.com/?p=555398.

14. Thorsten Bauer, "Mediatisation of Architecture," in *Urban Media Cultures: (Re)Shaping Public Space through Urban Screens and Media Architectures*, eds. Susa Pop et al. (Ludwigsburg: avedition GmbH, 2012), 60.

15. The after-image has been discussed by Mary Ann Doane following Jonathan Crary's widely-known study on vision and visual culture. See Mary Ann Doane, *The Emergence of Cinematic Time* (Cambridge, MA: Harvard University Press, 2002); and Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, MA: MIT Press, 1990).

16. About Janssens's work, and in particular her use of light, see Mieke Bal, *Endless Andness: The Politics of Abstraction According to Ann Veronica Janssens* (London: Bloomsbury, 2015). Marcos Novak describes liquid architecture as follows: "A liquid architecture is an architecture that is not longer satisfied with only one space and forms and light and all the aspects of the real world. It is an architecture of fluctuating relations between abstract elements" (215). See Marcos Novak, "Liquid Architectures in Cyberspace," in *Cyberspace: First Steps*, ed. Michael Benedikt (Cambridge, MA: MIT Press, 1991), 225-541.

17. See volume 3 of *The Key Debates*, edited by Ian Christie, *Audiences: Defining and Researching Screen Entertainment Reception* (Amsterdam: Amsterdam University Press, 2012). This book demonstrates that the terminology surrounding spectatorship is under debate. I want to suggest "engager" as a more appropriate term for describing the relationship between "users" and interactive screen-based technologies. Besides having a use value, such technologies clearly also entail modes of spectatorship.

18. Eric Gordon, "Towards a Theory of Network Localities: Local Knowledge and Politics in a Network Culture," *First Monday* 13, no. 10 (2008), http://firstmonday.org/article/view/2157/2035; Susa Pop, "Smart Cities: New (In)Visible Cities," in *Urban Media Cultures*, 40-47.

19. *The Bridge* can be seen as a smaller-scale and more casual version of the longer-running project *Large Screens and the Transnational Public Sphere* that sustained a connection between large screens set up in Melbourne and Seoul during three urban media events within the time-span of five years between 2008 and 2013. For more about this project, see Nikos Papastergiadis et al., "Mega Screens for Mega Cities," *Theory, Culture & Society* 30, no. 7-8 (2013): 325-341. Another historical echo I see in the earlier and much smaller-scale example of the *Hole in the Earth* installation from 2001, connecting Shanghai and Rotterdam. For more about that work see: "Hole in the Earth," *V2*, http://v2.nl/archive/works/hole-in-the-earth.

20. Nanna Verhoeff, *Mobile Screens: The Visual Regime of Navigation* (Amsterdam: Amsterdam University Press, 2012), 55; Émile Benveniste, *Problems in General Linguistics*, trans. Mary Elisabeth Meek (Coral Gables: University of Miami Press, 1971).

21. The selfie as cultural form is currently getting a lot of attention. *Selfiecity* is a large scale research project combining reflections on the selfie as visual form with methods of big data analysis. On this project and methodologies within digital huma-

nities, see Alise Tifentale and Lev Manovich, "Selfiecity: Exploring Photography and Self-Fashioning in Social Media," in *Postdigital Aesthetics: Art, Computation and Design*, eds. David M. Berry and Michael Dieter (Basingstoke: Palgrave Macmillan, 2015), 109-122.

22. Erkki Huhtamo, "Messages on the Wall: An Archaeology of Public Media Displays," in *Urban Screens Reader*. *INC Reader #5*, eds. Scott McQuire, Meredith Martin, and Sabine Niederer (Amsterdam: Institute of Network Cultures, 2009), 15-28; Uta Caspari, "Digital Media as Ornament in Contemporary Architecture Facades: Its Historical Dimension," in *Urban Screens Reader*, 65-74. Both texts are available online: http://www.networkcultures.org/_uploads/US_layout_01022010.pdf.

The Screenic Image: Between Verticality and Horizontality, Viewing and Touching, Displaying and Playing

1. Tim Nudd, "Coke Finds a Way to Cure Your Social-Media Addiction and-or Stop You Licking Your Stiches," *AdWeek*, February 19, 2014, http://www.adweek.com/adfreak/coke-finds-way-cure-your-social-media-addiction-andor-stop-you-licking-your-stitches-155818. The Coca-Cola ad can be viewed at: https://www.youtube.com/watch?v=_u3BRY2RF5I.

2. On the creation of the new word "phubbing," see: "Phubbing: A Word Is Born," *YouTube* video, 2:27, October 7, 2013, https://www.youtube.com/watch?v=ZSO-fuUYCV_0.

3. See: http://www.kyletwebster.com.

4. Published online on April 1, 2015: http://bizarro.com/comics/april-1-2015/. For more cartoons thematizing the "death of conversation," see the Bored Panda overview, from which the two discussed examples were selected: Julija Nėjė, "Death Of Conversation: 22+ Images Of How Smartphones Take Over Our Lives," *BoredPanda*, 2015, http://www.boredpanda.com/cartoon-smartphone-cellphone-addiction/.

5. See, for instance: Xie Chenglin, "Phubbing - Life in the Bow - 2015," *YouTube* video, 3:03, May 2, 2015, https://www.youtube.com/watch?v=snV2rZYfLX8&feature=youtu.be.

6. I would like to thank Chow Yiu Fai for helping me with the Chinese interpretation.

7. An earlier version of this text was presented at the Touching the Screen conference, organized by Susanne Ø. Sæther and Victoria Fu at the University of Oslo in April 2015. I would like to thank the organizers and participants of this event for their precious feedback.

8. See the demo video made in 1991: Pierre Wellner, "Tactile Manipulation on a Digital Desk," *YouTube* video, 9:59, December 16, 2009, https://www.youtube.com/watch?v=laApNiNpnvI.

9. See, for instance, Andrew Sears and Ben Shneiderman, "High Precision Touchscreens: Design Strategies and Comparisons with a Mouse," *International Journal Man-Machine Studies* 34 (1991): 593-613.

10. Catherine Plaisant, "High-Precision Touchscreens 1988-1991 HCIL Research. Explorations for Museum Kiosks, Device Control, Finger Painting and Touchscreen

Keyboards," *Human-Computer Interaction Lab. University of Maryland*, last modified July 2013, http://www.cs.umd.edu/hcil/touchscreens/.

11. See: "Exhibitions. Janet Cardiff: *To Touch*," *SAAG*, 1994, http://www.saag.ca/art/exhibitions/0602-to-touch.

12. Laura Marks, "Video Haptics and Erotics," *Screen* 39, no. 4 (1998): 334.

13. *Ibid.*, 332.

14. *Ibid.*, 334.

15. Nanna Verhoeff, *Mobile Screens. The Visual Regime of Navigation* (Amsterdam: Amsterdam University Press, 2012), 24.

16. Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (New York: Verso, 2013), 47.

17. *Ibid.*

18. Pasi Väliaho, "Marey's Gun: Apparatuses of Capture and the Operational Image," in *Technē/Technology*, ed. Annie van den Oever (Amsterdam: Amsterdam University Press, 2014), 175.

19. 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): 244, 243.

20. Operational images "include the use of stereometric photography in nineteenth-century architecture and land-surveying, photoreconnaissance flights over Auschwitz by the US Air Force in 1944, surveillance footage from security prisons and supermarkets, time and motion studies in factories, as well as the 2008 football World Cup final in Berlin, as tracked by sensors and vision machines." Elsaesser, "The 'Return,'" 244.

21. Francesco Casetti, "Che cosa è uno schermo, oggi?," *Rivista di Estetica* 55, no. 1 (2014): 103.

22. Thomas Hirschhorn, "Insoutenables destructions du corps. Entretien avec Hugo Vitrani," 2012, *Dailymotion* video, 11:26, July 29, 2012, http://www.dailymotion.com/video/xshflo_thomas-hirschhorn- insoutenables-destructions-du-corps_creation.

23. See: Kevin B. Lee, "Transformers: The Premake," *Vimeo* video, 25:03, https://vimeo.com/94101046.

24. Elsaesser, "The 'Return,'" 240-241.

25. *Ibid*, 241.

26. I have written on this scene in various occasions. See Wanda Strauven, "The Archaeology of the Touch Screen," *Maske und Kothurn* 58, no. 4 (2012): 69-79; "Re-disciplining the Audience: Godard's Rube-Carabinier," in *Cinephilia. Movies, Love and Memory*, eds. Malte Hagener and Marijke de Valck (Amsterdam: Amsterdam University Press, 2005), 125-133; and "Touch, Don't Look," in *I cinque sensi del cinema/The Five Senses of Cinema*, eds. Alice Autelitano, Veronica Innocenti, and Valentina Re (Udine: Forum, 2005), 283-291.

27. I follow here Johan Huizinga's analysis of the pretend game in his 1938 study *Homo Ludens*. See Johan Huizinga, "Nature and Significance of Play as a Cultural Phenomenon," in *The Game Design Reader*, eds. Katie Salen Tekinbaş and Eric Zimmerman (Cambridge, MA: MIT Press, 2005), 108.

28. Giuliana Bruno, *Surface: Matters of Aesthetics, Materiality, and Media* (Chicago: University of Chicago Press, 2014), 3.

29. See: Gabriel Fisher, "STAY IN LANE: Those 'Text-Walking Lanes' in Antwerp Were a Marketing Stunt That Broke Belgian Law," *Quartz*, June 16, 2015, http://qz.com/428286/texting-while-walking-lanes-appear-in-antwerp/. I would like to thank Irina Schulzki for drawing my attention to this Antwerp street project.
30. See: Sonali Kohli, "Will City-Dwellers Actually Use a No-Cellphones Lane on the Sidewalk?," *Quartz*, July 18, 2014, http://qz.com/237063/will-city-dwellers-actually-use-a-no-cellphones-lane-on-the-sidewalk/.

From Screen-Scape to Screen-Sphere: A Meditation *in Medias Res*

1. This essay is a significant elaboration of an earlier version, published under a slightly different title. See Vivian Sobchack, "Comprehending Screens: A Meditation in *Medias Res*," *Rivista di estetica* [Special issue: "Schermi/Screens," ed. Mauro Carbone] 55, no. 1 (2014): 87-101.
2. Christiane Voss, "Film Experience and the Formation of Illusion: The Spectator as 'Surrogate Body' for the Cinema," trans. Inga Pollmann, Introd. Vinzenz Hediger, *Cinema Journal* 50, no. 4 (Summer 2011): 139.
3. A term in physics and mathematics, "n-dimensions" refers to an unspecified number of dimensions beyond our familiar three spatial dimensions and one temporal dimension. There are theoretical models that posit dimensions into the double digits. Thus, the number of dimensions, when unknown or unspecified, is generalized as of "n-dimensions."
4. Legitimate medical studies confirm not only the increase in diagnoses of ADHD among children (a 53% rise over the last decade), but also among adults. One large statistical study conducted between 2002-2007 reports that while "the] claims database used included employed insured persons and dependents only," the "results highlight the rising prevalence of diagnosed ADHD in a US population." The increase "was more than three-fold" during the study period, "with the largest increase in the 18-24 years age group." The study concludes that their results "may underestimate the true prevalence of diagnosed ADHD in the US population." L. Montjano et al., "Adult ADHD: Prevalence of Diagnosis in a US Population with Employer Health Insurance," *Current Medical Research and Opinion* 27, Suppl. 2:5-11 (2011) accessed September 3, 2015, http://www.ncbi.nim.nih.gov/pubmed/21973227. This increase has been interpreted as merely an increase in diagnoses rather than in the disorder itself – this, in part, prompted by the expansion of the criteria for ADHD in the 2013 fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5), which now requires that symptoms appear before age 12 instead of before age 7; as well as, by the commercial interests and medical promotions of the US pharmaceutical industry.
5. E.H. Gombrich, *Art and Illusion: A Study in the Psychology of Pictorial Representation*, Millennial ed. (Princeton, NJ: Princeton University Press, 2000), 2.
6. The most efficient way to view these cartoons is through the *New Yorker* Archive (newyorker.com), which allows browsing issues by date. (The publisher, Condé Nast, also has a website devoted to cartoons for sale (condenast.com), but the collection is selective, unwieldy, and does not allow specific issue searches.

7.   Harry Bliss, *New Yorker*, December 17, 2012, 79.

8.   Mick Stevens, *New Yorker*, March 15, 2010, 22. For those not familiar with American texting, "OMG!" means "Oh, my God!"

9.   Emily Flake, *New Yorker*, January 28, 2013, 67.

10. Tom Cheney, *New Yorker*, May 17, 2013, 38.

11. Pat Byrnes, *New Yorker*, July 4, 2011, 18; Harry Bliss, *New Yorker*, February 7, 2011, 23.

12. Joe Dator, *New Yorker*, August 5, 2013, 20.

13. David Sipress, *New Yorker*, August 26, 2013, 20.

14. P.C. Vey, *New Yorker*, July 8 & 15, 2013, 76.

15. Francis Walsh, *New Yorker*, August 5, 2013, 64.

16. Diane Sawyer, "Texting While Walking Accidents," *ABC News*, May 14, 2012, accessed November 2, 2013, abcnews.go.com/WNT/video/texting-walking-accidents-video-1634825; and "Pedestrian Deaths Linked to Texting and Walking," *ABC News*, August 26, 2013, accessed November 2, 2013, abcnews.go.com/WNT/video/pedestrian-deaths-linked-texting-walking-2.

17. B. Smaller, *New Yorker*, July 21, 2014, 26.

18. William Haefeli, *New Yorker*, June 25, 2012, 72.

19. P.S. Mueller, *New Yorker*, January 2, 2012, 76.

20. Paul Noth, *New Yorker*, September 2, 2013, 22.

21. Drew Dernavich, *New Yorker*, October 28, 2013, 48.

22. Paul Noth, *New Yorker*, July 1, 2013, 56.

23. Paul Noth, *New Yorker*, November 24, 2014, 13.

24. Edward Steed, *New Yorker*, October 21, 2013, 70.

25. Paul Karasik, *New Yorker*, July 8 & 15, 2013, 82.

26. Félix Guattari, "Machinic Heterogenesis," in *Chaosmosis: An Ethico-Aesthetic Paradigm*, trans. Paul Bains and Julian Pefanis (Bloomington: Indiana University Press, [1992] 1995, 93ff.

27. For the very beginnings of an elaboration of "screenness" from a Heideggerian perspective, see Lucas D. Introna and Fernando M. Ilharco, "On the Meaning of Screens: Towards a Phenomenological Account of *Screenness*," *Human Studies* 29 (2006): 57-76.

28. Charles R. Acland, "The Crack in the Electronic Window," *Cinema Journal* 51, no. 2 (Winter 2012): 168 [my italics].

29. For an insightful précis of the concept of the interface, see Seung-Hoon Jeong, *Cinematic Interfaces: Film Theory after New Media* (New York and London: Routledge, 2013), 3-9.

30. Sudeep Dasgupta, "On Screen: Electronic Media and the Embodied Subject," *Ethnofoor* 15, no. 1-2 (2002): 121.

31. Acland, "The Crack in the Electronic Window," 168 [my italics].

32. It is important here to not conflate the terms "systemic" and "systematic." "Systemic" refers to a set of interdependencies among parts that synchronically constitute and are inherent to a single entity. "Systematic" refers to a set of step-by-step and diachronic procedures – an intentional method – which can be applied to, and within, a system but are not equivalent to it.

33. W.J.T. Mitchell and Mark B.N. Hansen, "Introduction," in *Critical Terms for Media Studies*, eds. W.J.T. Mitchell and Mark B.N. Hansen (Chicago: University of Chicago Press, 2010), xi.

34. See Guattari, "Machinic Heterogenesis," 33-57. Guattari conceives of the term so as to free the machine from its reduction to the mere manifestation of technology, and expand its meaning to encompass other machinic entities as well as human beings. Moreover, Guattari privileges what he calls "aesthetic machines" for their involvement in the creative production of what he calls "new existential territories" – certainly exemplified here by the "screen-sphere." Although Guattari opposes the machinic's dynamism and processuality to structure and system (and thus prefers the looser collective term "machinic assemblage"), the "machinic" is apposite to screens since, their systemicity is not merely systematic. That is, although their operational algorithms may be procedurally systematic, as their "heterogenetic" components interact and communicatively connect, they become increasingly complex and reflexive, and the operations of the system as a whole may begin to amend and/or supersede solely rule-driven behavior. (I am most grateful to Stefan Kristensen for bringing Guattari's text to my attention.)

35. The term was coined by Norbert Wiener in his 1948 book, *Cybernetics: Control and Communication in the Animal and Machine* (Cambridge, MA: MIT press, 1948). As a field, cybernetics is the general study of control (actions meant to achieve a goal) and communication systems (the flow and exchange of information) in both living organisms (biological systems) and machines ("artificial" systems) – as well as between and among them.

36. See, for example, N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999); Jerome McGann, "Marking Texts of Many Dimensions," in *A Companion to Digital Humanities*, eds. Susan Schreibman, Raymond George Siemens, and John M. Unsworth (Oxford: Wiley-Blackwell, 2004), 198-217; and Bruce Clarke and Mark B.N. Hansen, eds. *Emergence and Embodiment: New Essays on Second-Order Systems Theory (Science and Cultural Theory)* (Durham, NC: Duke University Press, 2009).

37. N. Katherine Hayles, "Boundary Disputes: Homeostasis, Reflexivity, and the Foundations of Cybernetics," *Configurations* 2, no. 3 (1994): 462.

38. Hayles, "Boundary Disputes," 462.

39. Humberto R. Maturana and Francisco J. Varela, "Autopoiesis: The Organization of the Living," in *Autopoiesis and Cognition: The Realization of the Living* (Dordrecht: D. Reidel Publishing Co., [1973] 1980), 73-123. See also F.J. Varela, H.R. Maturana, and R. Uribe, "Autopoiesis: The Organization of Living Systems, Its Characterization and a Model," *BioSystems* 5 (1974): 187-196.

40. Hayles, "Boundary Disputes," 463.

41. This periodization and the modification (rather than disappearance) of foundational cybernetic concepts is masterfully tracked over time throughout Hayles's "Boundary Disputes."

42. Varela, Maturana, and Uribe, "Autopoiesis."

43. Dr. Randall Whitaker, "Autopoiesis and Enaction: The Observer Web – Enola Gaia," Tutorial 2, 2002, *Observer Web*, accessed November 3, 2013, www.enolagaia.com/

Checklist.html. Unless otherwise specified, subsequent reference to the checklist criteria are derived from Whitaker and Tutorial 2. Moreover, all subsequent quotations from Whitaker himself are taken from Tutorial 2.

44. Francisco J. Varela, Evan Thompson, and Eleanor Rosch, *The Embodied Mind: Cognitive Science and Human Experience* (Cambridge, MA: MIT Press, 1991), 192.

45. Varela, Maturana, and Uribe, "Autopoiesis," 193 [my italics].

46. *Ibid.*

47. Francisco J. Varela, *Principles of Biological Autonomy* (North Holland, NY: Elsevier Science, 1979), 55.

48. A recursive procedure involves at least one of its steps calling for a new instance of the same procedure.

49. Jack Samud, *New Yorker*, March 30, 2015, 28.

50. Hayles, "Boundary Disputes," 447.

51. Guattari, "Machinic Heterogenesis," 40. It must be emphasized that Guattari is generally "anti-system," in part because he understands Maturana and Varela's insistence on "organizational closure" as necessary to autopoiesis as total closure. His own argument thus moves in a radically different direction than theirs – and, indeed, than mine here.

52. *Ibid.*

53. *Ibid.*

54. Mitchell and Hansen, "Introduction," ix.

55. Francisco J. Varela, "Laying Down a Path in Walking," in *Gaia, a Way of Knowing: Political Implications of the New Biology*, ed. William Irwin Thompson (Hudson, NY: Lindisfarne Press, 1987), 75 [my italics].

56. Most of the time, we do not physically occupy this virtual space. However, we all know it is now possible through the various "immersive" technologies and devices of virtual-reality simulations, the most recent, Oculus Rift.

57. For illustrations of Möbius transformations, particularly stereographic projections, see "Möbius Transformations," *Wikipedia. The Free Encyclopedia*, https://en.wikipedia.org/wiki/M%C3%B6bius_transformation.

58. Kevin Fisher, "Tracing the Tesseract: A Conceptual Prehistory of the Morph," in *Meta-Morphing: Visual Transformation and the Culture of Quick Change*, ed. Vivian Sobchack (Minneapolis: University of Minnesota Press, 2000), 122. In the service of exploring digital "morphing," Fisher's essay is an extraordinary overview of n-dimensional geometry and attempts to visually represent it. I am deeply indebted to Fisher and this particular essay for much of whatever understanding of n-dimensional geometry I may possess. His work also directed me to another invaluable work: Linda Dalrymple Henderson, *The Fourth Dimension and Non-Euclidean Geometries in Modern Art,* rev. ed. (Cambridge, MA: MIT Press, 2013).

59. Fisher, "Tracing the Tesseract," 122.

60. Maturana and Varela, "Autopoiesis: The Organization of the Living," 326.

61. Gombrich, *Art and Illusion*, 3.

62. Jerome Groopman, "Print Thyself: How 3-D Printing Is Revolutionizing Medicine," *New Yorker*, November 24, 2014, 78-85.

63. Michael Maslin, *New Yorker*, January 5, 2015, 59.

The Concept of the Mental Screen: The Internalized Screen, the Dream Screen, and the Constructed Screen

1. This essay is a rather significantly modified version of a paper presented at the symposium "D'un écran à l'autre: Les mutations du spectateur" organized by Jean Chateauvert and Gilles Delavaud at INA (Institut National de l'Audiovisuel), May 21-23, 2014. This paper was published in French under the title: "Espaces de communication physiques, espaces de communication mentaux," in *D'un écran à l'autre: Les mutations du spectateur*, eds. Jean Chateauvert and Gilles Delavaud (Paris: L'Harmattan, Media en actes collection, 2015).

2. Charles Rambaud was one of the creators of "*Langage Total*." He published *Regardez voir! Pour apprendre à lire un film* (Bouère: Dominique Martin Morin Publisher, 1998).

3. Regarding "being put in sync," see Roger Odin, *De la fiction* (Brussels: De Boeck, 2000).

4. I have tried to describe this movement in my article "L'entrée du spectateur dans la fiction," in *Théorie du film*, eds. Jacques Aumont and Jean-Louis Leutrat (Paris: Albatros, 1980), 198-213; this article has been significantly rewritten for *De la fiction*.

5. I borrowed this term from Gilles Fauconnier, *Espaces mentaux* (Paris: Editions de Minuit, 1984).

6. Raymond Bellour, *La Querelle des dispositifs. Cinéma - installations, expositions* (Paris: P. O.L., 2012), 14.

7. Francesco Casetti and Sara Sampietro, "With Eyes, With Hands. The Relocation of Cinema Into iPhone," in *Moving Data: The iPhone and the Future of Media*, eds. Pelle Snickars and Patrick Vonderau (New York: Columbia University Press, 2012), 19-32.

8. The size of smartphone screens is increasing under the pressure of consumers. Even Apple, which has long been reluctant ("Nobody will ever buy a phone as big as that," claimed Steve Jobs in 2010), started to do it. A new product category even appeared: the *phablet*, a hybrid of a phone and a tablet. See Jerôme Marin, "Mobiles: Apple superstar," *Le Monde*, Tuesday, March 3, 2015.

9. Jacques Aumont, *Que reste-t-il du cinéma?* (Paris: Vrin, 2012), 78, 82.

10. *Ibid.*, 84.

11. On the relationship between the mobile phone and cinema, see my articles: "Spectator, Film and the Mobile Phone," in *Audiences. Defining and Researching Screen Entertainment Reception*, ed. Ian Christie (Amsterdam: Amsterdam University Press, 2012), 155-169; and "Quand le téléphone portable rencontre le cinéma," in *Téléphone mobile et création*, eds. Laurence Allard, Laurent Creton, and Roger Odin (Paris: Armand Colin, 2014), 37-54.

12. Candied almonds (*dragées* in French) are a traditional gift in France to guests who attend a baptism or marriage.

13. Speech by Jean-Louis Boissier at the *Pocket Film festival*, Forum des Images, 2006.

14. Kevin Maney, "Baby's Arrival Inspires Birth of Cellphone Camera – and Societal Evolution," *USAToday*, January 23, 2007, http://bit.ly/7VMpDk; quoted by Laurence Allard in: *Mythologie du portable* (Paris: Le Cavalier Bleu, 2009), 5-6.

15. Laurent Jenny, *La vie esthétique: Stases et flux* (Verdier: Lagrasse, 2013), 89-91.

16. The approach based on "cultural series" was initiated by André Gaudreault and

Philippe Gauthier. See their "Les séries culturelles de la conférence-avec-projection et de la projection-avec-boniment: continuités et ruptures," in *Beyond the Screen: Institutions, Networks and Public of Early Cinema*, eds. Marta Braun et al. (Eastleigh: John Libbey Publishing, 2012), 233-238.

17. Jenny's *La vie esthétique* contains a chapter entitled "'visions cadrées,'" 67 sq.

18. Marcel Proust quoted in Jenny, *La vie esthétique*, 67-68. Quote taken from: Marcel Proust, *In Search of Lost Time, Volume 1: Within a Budding Grove*, trans. C.K. Scott Moncrieff (1889-1930) (London: Chatto & Windus, 1924).

19. *Ibid.*, 68.

20. Jenny, *La vie esthétique*, 67-69.

21. Laurent Jullier, *Cinéma et cognition* (Paris: L'Harmattan, Ouverture philosophique, 2002), 93.

22. Some references among many others: Meyer Schapiro, "On Some Problems in the Semiotics of Visual Art: Field & Vehicle in Image-Signs," in *Semiotica* (The Hague: Mouton & Co., 1969), 223-242; Victor Ieronime Stoichita, *L'Instauration du tableau* (Paris: Klincksieck, 1993); Louis Marin, "Le cadre de la représentation et quelques-unes de ses figures," *Les Cahiers du Musée national d'Art Moderne* 24 (Summer 1988): 62-81 (lecture given on 10/12/1987); and Francesca Polacci "Marges en question," *Actes Sémiotiques* 115 (2012), accessed March 11, 2015, http://epublications.unilim.fr/revues/as/1922.

23. The notion of "cultural series" is borrowed from André Gaudreault to describe the fact that film productions have much in common with non-cinematic cultural forms. I am referring to it here, in particular, to show the affiliation between the mobile phone and other devices with which we explore the world. See André Gaudreault, *Cinéma et attraction: Pour une nouvelle histoire du cinématographe* (Paris: CNRS Editions, 2008), 114.

24. Louis Marin, *De la représentation* (Paris: Presses Universitaires de France, 1994).

25. This process was conceptualized by Christian Metz as "*identification au regard caméra*"; see *The Imaginary Signifier: Psychoanalysis and the Cinema*, trans. Celia Britton et al. (Bloomington: Indiana University Press, 1982).

26. Jenny, *La vie* esthétique, 69. Note that the reference to a pictorial space, as was the case with the story of the zoom, belongs to the artistic space. On the difference between aesthetic space and artistic space, see Roger Odin, *Les Espaces de communication. Introduction à la sémio-pragmatique* (Grenoble: Presses Universitaires de Grenoble, 2011), 65-82.

27. Karl Sierek, "C'est beau ici. Se regarder voir dans le film de famille," in *Le Film de famille, usage privé, usage public*, ed. Roger Odin (Paris: Meridiens Klincksieck, 1995), 75-76 [my translation]. Sierek refers to the super 8 home movie, but, regarding the relationship through the frame-screen, things are the same but the use of a Super 8 camera was much less common than the use of the frame-screen of a mobile phone.

28. Roger Odin, "The Home Movie and Space of Communication," in *Amateur Filmmaking. The Home Movie, the Archive, the Web*, eds. Laura Rascaroli, Gwenda Young, Barry Monahan (New York and London: Bloomsbury Academic, 2014), 15-26, and "La

question de l'amateur," in "Le Cinéma en amateur," special issue, ed. Roger Odin, *Communications* 68 (1999): 50-51.

29. Laurent Jenny, "Libre comme l'art," *Le Monde*, March 15, 2013.

30. Laurence Allard, "*Express Yourself 3.0!* Le mobile comme technologie pour soi et quelques autres entre double agir communicationnel et continuum disjonctif soma-technologique," in *Téléphone mobile et création*, 139-162.

31. Michel Foucault, "Subjectivité et vérité," in *Dits et Écrits, 1976-1988* (Paris: Gallimard, Paris, 2001), 304.

32. This essay can be read as a complement to my book *Les Espaces de communication*.

33. On this point, see Lev Manovich, *The Language of New Media* (Cambridge, MA: MIT Press, 2001) and Raphaël Lellouche, "Théorie de l'écran," www.erba-valence.fr/modules/enseign/jpb/theoriecran.htm.

Between Fascination and Denial: The Power of the Screen

1.   LES ENFANTS DE LA TÉLÉ was voted "Best TV show of all time" according to a survey in *Watch and Listen* (May 2015). See Brent Meslow, "Les Enfants de la télé' Voted Best TV Show of All Time," *Mediamass*, last modified August 25, 2015, http://en.mediamass.net/culture/les-enfants-de-la-tele/best-of-all-time.html#.

2.   Jacqueline E. Jung, "Beyond the Barrier: The Unifying Role of the Choir Screen in Gothic Churches," *The Art Bulletin* 82, no. 4 (2000): 622.

3.   *Ibid.*, 649.

4.   See Julian Hochberg, "The Representations of Things and People," in *Art, Perception and Reality* (Baltimore and London: The Johns Hopkins University Press, 1970), 74.

5.   Pierre Barthélémy, "Cape d'invisibilité, es-tu là?" *Thinckovery* 3 (2015), http://passeurdesciences.blog.lemonde.fr/2015/04/22/cape-dinvisibilite-es-tu-la/#xtor=AL-32280270.

6.   Nelson Goodman, *Languages of Art. An Approach to a Theory of Symbols* (Indianapolis and New York: The Bobbs-Merrhil Company, 1968), 68.

7.   See Roman Jakobson and Morris Halle, *Two Aspects of Language and Two Types of Aphasic Disturbances in Fundamentals of Language* (The Hague and Paris: Mouton, 1956).

8.   André Pieyre de Mandiargues, *Le Musée noir* (Paris: Robert Laffont, 1946), 7.

9.   Goodman, *Languages of Art*, 80.

10. Gaston Bachelard, *The Formation of the Scientific Mind. A Contribution to the Psychoanalysis of Objective Knowledge* [*La formation de l'esprit scientifique*], trans. Mary McAllester Jones (Manchester: Clinamen Press, [1938] 2002), 109.

11. Robert Van Gulick, "Time for More Alternatives," in *The Nature of Consciousness. Philosophical Debates*, eds. Ned Joel Block, Owen J. Reagan, and Güven Güzedere (Cambridge, MA: MIT Press, 1997), 181.

12. Robert Pepperell and Michael Hunt, *Screen Consciousness. Cinema, Mind and World* (Amsterdam and New York: Editions Rodopi, 2006), 23.

13. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus. Capitalism and Schizophrenia* [*Mille plateaux*], trans. Brian Massumi (Minneapolis and London: University of Minnesota Press, [1980] 1987), 189.

14. Jacques Lacan, *The Four Fundamental Concepts of Psycho-Analysis: The Seminar of Jacques Lacan, Book XI* [*Les Quatres Concepts fondamentaux de la psychanalyse*], trans. Alan Sheridan (New York and London: W.W. Norton & Company, [1964-1973] 1998), 107.

15. Laura Mulvey, "Visual Pleasure and Narrative Cinema," *Screen* 16, no. 3 (Fall 1975); reprinted in *Visual and Other Pleasures* (New York: Palgrave Macmillan, 2009), 17.

16. Maurice Merleau-Ponty, *The Visible and the Invisible* [*Le Visible et l'Invisible*, 1964], ed. Claude Lefort, trans. Alphonso Lingis (Evanston: Northwestern University Press, Studies in Phenomenology and Existential Philosophy, 1968), 125. Merleau-Ponty multiplies the metaphors around the screen: "his situation, his body, his thoughts do not form a screen between him and the world," 62; "a Being that actively conceals itself and pushes before itself the screen of our thought and of its evidences," 106. He also evokes the Freudian theory of the "memory screens," those memories that, by occupying the mind, prevent it from recalling other memories: "Like the memory screen of the psychoanalysts, the present, the visible counts so much for me and has an absolute prestige for me only by reason of this immense latent content of the past, the future, and the elsewhere, which it announces and which it conceals," 114.

17. Marcel Proust, *Swann's Way* [*Du côté de chez Swann*], trans. C.K. Scott Moncrieff (New York: The Modern Library, [1926] 1928), 503.

18. *Ibid.*

19. Interview with Pierre Soulages by Patrick Vauday, "Pierre Soulages - La lumière comme matière," August 15, 2002, in "Le matériau, voir et entendre," *Rue Descartes, the Collège international de philosophie* 38 (December 2002).

20. Charles S. Peirce, *Collected Papers*, vol. 2, eds. Ch. Hartshorne and P. Weiss (Cambridge and London: The Belknap Press of Harvard University Press, 1931-1958), 276-277.

21. *Ibid.*, vol. 3, 362.

22. Edgar Morin, *The Cinema, or The Imaginary Man* [*Le cinéma ou l'homme imaginaire*], trans. Lorraine Mortimer (Minnesota and London: University of Minnesota Press, [1956-1978] 2005), 225.

23. Andy Warhol, *The Philosophy of Andy Warhol. From A to B and Back Again* [1975], http://thephilosophyofandywarhol.blogspot.fr/2009/09/12-art.html.

24. Plato, *The Republic*, Book 7. 514b, trans. Benjamin Jowett, *The Internet Classics Archive*, http://classics.mit.edu//Plato/republic.html.

25. Georges Duhamel quoted in: Walter Benjamin, *The Work of Art in the Age of Mechanical Reproduction*, trans. J.A. Underwood (New York: Penguin Books, Penguin Great Ideas, [1936] 2008).

26. Raymond Bellour, *La Querelle des dispositifs. Cinéma – installations, expositions* (Paris: P. O.L., 2012), 14.

27. Archibald Alison, *Essays on the Nature and Principles of Taste* (Hildesheim: Georg Olms Verlagsbuchhandlung, Anglistica & Americana, [1790] 1968).

28. Comparison is a metaphor whose two parts are explicit. To take the examples of Aristotle's *Poetics*: one can say "old age is the evening of life" (comparison) or use the expression "the evening of life" instead of "old age" (metaphor).

29. Sigmund Freud, "Psychical, or Mental, Treatment," in *The Standard Edition of the Complete Psychological Work of Sigmund Freud*, vol. 7, trans. James Strachey, in coll. with Anna Freud (London: The Hogarth Press and the Institute of Psychoanalysis, [1905] 1953), 296.

30. See G.W.F. Hegel, *Phenomenology of Spirit*, trans. A.V. Miller (Oxford: Clarendon Press, 1977), §190.

31. Christian Metz, *The Imaginary Signifier: Psychoanalysis and the Cinema* [*Le Signifiant imaginaire*], trans. Celia Britton, Annwyl Williams, Ben Brewste, and Alfred Guzzetti (Bloomington and Indianapolis: Indiana University Press, [1977] 1982).

Screens after Dos Passos's *U.S.A.* Trilogy: Current Answers for the Eyeminded Public

1. Research work for this paper was funded by grants from FFI2011-23362 (MICINN) and 18958/JLI/13 (Fundación SENECA, Plan Regional de Ciencia y Tecnología de la Región de Murcia).

2. Footnote to Mary Ann Doane, "Aesthetics and Politics," *Signs* 30, no. 1 (2004): 1229-1235.

3. Annette Kuhn, "Screen and Screen Theorizing Today," *Screen* 50, no. 1 (2009): 5.

4. *Apparatus* in a broad sense here means something that goes beyond the technical or material boundaries of the medium, but rather develops in a social dimension, like *dispositif* in Foucault's philosophical theory, for example.

5. Jacques Rancière, *Le spectateur émancipé* (Paris: La Fabrique éditions, 2008).

6. Dominique Chateau, *Cinéma et philosophie* (Paris: Nathan, 2003), and *Esthétique du cinéma* (Paris: Armand Colin, 2006).

7. Juan Miguel Company and José Javier Marzal, *La mirada cautiva. Formas de ver en el cine contemporáneo* (Valencia: Generalitat Valenciana, 1999).

8. Raphaël Lellouche, "Théorie de l'écran," *Traverses* 2 (April 1997), Centre Georges Pompidou, http://www.cnac-gp.fr/traverses.

9. Following Lellouche, "Théorie de l'écran," and Richard Barbeau, "De la contemplation à l'immersion: Une 'théorie de l'écran' proposée par Raphaël Lellouche," *Archée* (1999), accessed August 6, 2015, http://www.archee.qc.ca/ar.php?page=article&no=5.

10. Barbeau, "De la contemplation à l'immersion," 1. In the French original: "*support fixe d'inscription.*" From here onwards, all the translations into English are my own, except when a published English edition of the text is available.

11. In the French original: "*l'affichage de l'état-machine*" (ibid., 1).

12. *Ibid.*, 1-2.

13. *Ibid.*, 2.

14. Stéphane Lojkine, ed., *L'Écran de la représentation* (Paris: L'Harmattan, 2001).

15. As an alternative to the Lacanian obscure influence, it is possible to turn to the Peircean complex articulation of icon / index / symbol as a basis for overcoming the classic dichotomies.

16. Lojkine, *L'Écran de la représentation*, 301.

17. *Ibid.*, 312.

18. *Ibid.*, 55.

19. John Dos Passos, *U.S.A.* (New York: Harcourt Brace, 1938).

20. I greatly appreciate the incitement for some ideas of this text coming from my participation in a non-academic reading group (Seminario de Literatura) that meets every year at the Department of Philosophy of the University of Valencia (Spain), and in particular the seminar about Dos Passos's *U.S.A.* trilogy held during the 2014-2015 academic year.

21. Wesley Beal, "Network Narration in John Dos Passos's U.S.A. Trilogy," *DHQ: Digital Humanities Quarterly* 5, no. 2 (2011), 2, §5, http://digitalhumanities.org/dhq/vol/5/2/000094/000094.html. Beals defines network narrative this way: "it mediates the dialectic of totalization of fragmentation with linking mechanisms that draw atomized nodal formations into a constellar system."

22. Michael North, "An Eyeminded People. Spectatorship in Dos Passos's U.S.A," in *Camera Works. Photography and the Twentieth-Century World* (Oxford: Oxford University Press, 2005).

23. Beal, "Network Narration," 1, §1 and 2.

24. As is well known, Dos Passos had a strong link with left-wing activism in the US and in Europe, but he experienced a process of distancing (especially from the orthodoxy of left-wing parties) which accelerated considerably after the death of his friend and translator José Robles Pazos in Spain, presumably at the hands of the Stalinist secret service.

25. Beal, "Network Narration," 2, §3.

26. David Bordwell, "Mutual Friends and Chronologies of Chance," in *Poetics of Cinema* (New York: Routledge, 2008), 189-250.

27. David Ciccoricco, *Reading Network Fiction* (Tuscaloosa: University of Alabama Press, 2007).

28. Beal, "Network Narration," 3, §10 and 11.

29. *Ibid.*, 5, §15.

30. *Ibid.*, 5, §16.

31. North, "An Eyeminded People," 141.

32. John Dos Passos, *The Major Nonfictional Prose*, ed. Donald Pizer (Detroit: Wayne State University Press, 1988), 173.

33. North ("An Eyeminded People," 240, note 4) remarks that "the rather strange phrase may well have been somewhat common at the time." Harry Potamkin claimed in 1933 that "most people are eye-minded." See Harry Potamkin, "The Eye of the Movie," in *The Compound Cinema*, ed. Lewis Jacobs (New York: Teacher's College Press, 1977).

34. North, "An Eyeminded People," 141-142. The Dos Passos quotes are taken from *The Major Nonfictional Prose*, 75.

35. North, *ibid.*, 142 [my italics].

36. Dos Passos, *The Major Nonfictional Prose*, 283.

37. North, "An Eyeminded People," 144.

38. *Ibid.*

39. *Ibid.*

40. According to North's remarks, "Camera Eye" sections make a 180º turn from the objectivist experiments of avant-garde films, but its presupposed objectivity is quite

complex in the main protagonists of these avant-garde films (Dziga Vertov or Jean Vigo, for example) to the extent that we would say that in their experiments the most subjective becomes the most objective.

41. Dos Passos, *The Major Nonfictional Prose*, 247.

42. *Ibid.*, 179.

43. North, "An Eyeminded People," 146-147. All the quotations by Michael North from *U.S.A.* trilogy refer to John Dos Passos, *U.S.A.*, eds. Daniel Aaron and Townsend Ludington (New York: Library of America, 1996). My own quotations will refer to the same edition from now on, if there is no other indication.

44. *Ibid.*, 147.

45. *Ibid.*, 148.

46. Celia Tichi, "Opportunity: Imagination Ex Machina I," in *Shifting Gears: Technology, Literature, Culture in Modernist America* (Chapel Hill, NC: University of North Carolina Press, 1987), 216. Caren Irr, "'All Right We Are Two Nations': Speed and the Stratification of Culture in U.S.A," in *The Suburb of Dissent: Cultural Politics in the United States and Canada during the 1930s* (Durham, NC: Duke University Press, 1998), 64.

47. Beal, "Network Narration," 5, §18.

48. *Ibid.*, 6, §19.

49. *Ibid.*, 6, §21.

50. *Ibid.*, 6, §22.

51. North, "An Eyeminded People," 155.

52. Juan A. Suárez, "John Dos Passos's USA and Left Documentary Film in the 1930s: The Cultural Politics of 'Newsreel' and 'The Camera Eye,'" *American Studies in Scandinavia* 31, no. 1 (1999): 48, http://ej.lib.cbs.dk/index.php/assc/article/view/1107/1110.

53. *Ibid.*, 62-63.

54. North, "An Eyeminded People," 155-156.

55. On the occasion of my participation in the non-academic reading group (Seminario de Literatura) previously referred to in footnote 20.

56. North, "An Eyeminded People," 162.

57. *Ibid.*, 240, note 4.

58. See for example Barbeau, "De la contemplation à l'immersion."

59. North, "An Eyeminded People," 155.

60. Guy Debord, *The Society of the Spectacle*, trans. Donald Nicholson-Smith (New York: Zone, 1995), 22.

61. North, "An Eyeminded People," 148.

62. *Ibid.*, 152-153.

63. Juan A. Suárez ("John Dos Passos's USA and Left Documentary Film in the 1930s," 57) underlines Dos Passos's link with Nikino (acronym for New York Kino, a new group of documentaries which maintained its sympathies with the radical left yet sought to distance itself from Communist Party directives) and his participation in the production of the film THE SPANISH EARTH when Dos Passos definitively broke with the official (pro-Stalinist) left.

64. North, "An Eyeminded People," 147.

65. *Ibid.*

66. *Ibid.*

67. The metaphor may be extended to the point of including the episode of the missing (and presumable execution) of Dos Passos's translator and close friend José Robles in Spain: it means for Dos Passos the definitive awareness of being seen (by the Stalinist secret services), yet from the point of view (fortunately for him) of a hurt voyeur, even if not a direct victim.

68. North, "An Eyeminded People," 149.

69. Suárez, "John Dos Passos's USA and Left Documentary Film in the 1930s," 62.

El Lissitzky's Screening Rooms

1. Another version of this paper appears in Cécile Guédon and Isabelle Rieusset-Lemarié, eds., "L'Art et les arts," special issue, *Nouvelle revue d'esthétique* 16 (Fall 2015). For their feedback on versions of this paper I thank Cécile Guédon, Giuliana Bruno, Laura Frahm, and members of the Film and Visual Studies workshop at Harvard University.

2. El Lissitzky, "K. und Pangeometrie," in *Europa Almanach*, eds. Carl Einstein and Paul Westheim (Potsdam: Kiepenheuer Verlag, 1925), 103-113. The title refers to Nikolai Lobachevsky's memoir and treaty on non-Euclidean geometry, *Pangeometry* (Kazan: Kazan University, 1855). Translated as "A. and Pangeometry" in: Sophie Lissitzky-Küppers, *El Lissitzky: Life, Letters, Texts*, trans. Helene Aldwinckle and Mary Whittall (London: Thames and Hudson, 1980), 356. Unless otherwise indicated, I refer to this translation.

3. "[...] nur eine dematerialisierte Flächenprojektion [...]." Lissitzky, "K. und Pangeometrie," 110 [my translation].

4. El Lissitzky, "The Films of El's Life," typescript in the Lissitzky archive, Central State Archives for Literature and Art (TsGALI), Moscow, no. 58. Translation from Lissitzky-Küppers, *El Lissitzky: Life, Letters, Texts*, 329.

5. Lissitzky also referred to the *Prounenraum* as a "Demonstration Room." However, the project is distinct from the later Hannover and Dresden Rooms, in part because Lissitzky completely resisted the use of walls as a ground for art works, creating a work closer to installation than exhibition space. For a discussion of that work's important political dimensions see Éva Forgács, "Definitive Space: The Many Utopias of El Lissitzky's *Proun Room*," in *Situating El Lissitzky: Vitebsk, Berlin, Moscow*, 47-75.

6. Margarita Tupitsyn points out that Russian art critic Nikolai Khardzhiev claimed Lissitzky considered animating some of his abstract compositions in the early 1920s. Margarita Tupitsyn, "After Vitebsk," in *Situating El Lissitzky*, 183.

7. Lissitzky-Küppers, *El Lissitzky: Life Letters Texts*, 47.

8. *Ibid.*, 58.

9. It is worth stressing that he repeatedly refers to the project as his "kino" rather than as the Lenin Bau. The only mention I have found of this unrealized project is in Kai-Uwe Hemken, *El Lissitzky: Revolution und Avantgarde* (Köln: Dumont, 1990), 81-82. He plausibly suggests that the Lenin Tribune and Wolkenbügel may have been influenced by the Lenin-Bau designs.

10. Following Maria Gough, I translate *Demonstrationsräume* as "demonstration rooms" rather than "exhibition rooms."

11. For a far more detailed description and analysis of the Demonstration Rooms, see Maria Gough's substantial essay, "Constructivism Disoriented: El Lissitzky's Dresden and Hannover *Demonstrationsraüme*," in *Situating El Lissitzky: Vitebesk, Berlin, Moscow*, eds. Nancy Perloff and Brian Reed (LosAngeles: Getty Research Institute, 2003), 77-128.

12. The term has been attributed to American experimental filmmaker Stan VanDerBeek: see Gloria Sutton, *The Experience Machine* (Cambridge: MIT Press, 2015). It was then used by Gene Youngblood in his influential study of new media art, *Expanded Cinema* (New York: Dutton, 1970). As this essay will explain, "cinema by other means" refers to Pavle Levi's *Cinema by Other Means* (New York: Oxford University Press, 2012).

13. See Giuliana Bruno, *Surface: Matters of Aesthetics, Materiality, and Media* (Chicago: University of Chicago Press, 2014).

14. El Lissitzky, "Self-Portrait," Gelatin Silver print, 1924 (MoMA, New York), http://www.moma.org/collection/works/83836?locale=en; El Lissitzky, "Dziga Vertov-Kino-Auge," Gelatin silver print, 1929 (Museum of Fine Arts, Houston), https://collections.mfah.org/art/detail/70758?returnUrl=%2Fart%2Fsearch%3Fartist%3DEl%2BLissitzky%257CJoseph%2BMills.

15. Lissitzky, "A. and Pangeometry," 356.

16. *Ibid* [my italics].

17. Significantly, between 1925-1926 and concurrent with Lissitzky's essay and first Demonstration Room, Duchamp (with Man Ray and Marc Allégret) would film the rotation of the discs ("rotoreliefs") to make the abstract film ANÉMIC-CINÉMA.

18. El Lissitzky, "Prounenraum, Grosse Berliner Kunstausstellung 1923," *G: Material zur elementaren Gestaltung* 1 (July 1923).

19. El Lissitzky, "Proun Room, Great Berlin Art Exhibition," in *El Lissitzky: Life, Letters, Texts*, 365.

20. "The artist is turning from an imitator into a constructor of the new world of objects [...]. We saw that the surface of the *Proun* ceases to be a picture and turns into a structure round which we must circle, looking at it from all sides, peering down from above, investigating from below." El Lissitzky, "PROUN: Not World Visions BUT – World Reality," *De Stijl* 5, no. 6 (June 1922). Translated in Lissitzky-Küppers, *El Lissitzky: Life, Letters, Texts*, 347-348.

21. In the same issue, Naum Gabo and Antoine Pevsner claim the "cinematic" as a central element of art, and Raoul Hausmann suggests film as a means to find new "binding forms" in art. Naum Gabo and Antoine Pevzner, "Thesen aus dem realistischen Manifest Moskau 1920," *G: Material zur elementaren Gestaltung*, no. 1 (1923); Raoul Hausmann, "Vom sprechenden Film zur Optophonetik," *G: Material zur elementaren Gestaltung*, no. 1 (1923).

22. Lissitzky, "A. and Pangeometry," 356-357.

23. Youngblood mainly writes about work from the American, Canadian, and British context, highlighting artists such as Carolee Scheeman, Nam Jun Paik, Francis Thompson, and Roman Croitor.

24. Levi, *Cinema by Other Means*, xiii.

25. *Ibid.*, 27.

26. Gilles Deleuze, *Foucault*, trans. Sean Hand (Minneapolis: University of Minnesota Press, 1988), 35.

27. Levi, *Cinema by Other Means*, 78.

28. Lutz Robbers, "Modern Architecture in the Age of Cinema: Mies van der Rohe and the Moving Image" (unpublished PhD dissertation, Princeton University School of Architecture, 2012), 205.

29. Tupitsyn, "After Vitebsk," 186.

30. *Ibid.*, 177.

31. Gough, "Constructivism Disoriented," 111, 112.

32. *Ibid.*, 81

33. *Ibid.*, 113.

34. National Socialists destroyed the room in 1937.

35. Much of the literature on Lissitzky mentions only the Hannover *Kabinett*, primarily because more people saw the second room but also, and more troublingly, because of Dorner's obfuscation of the first room.

36. El Lissitzky, letter to Sophie Küppers, March 29, 1926. Translation in Lissitzky-Küppers, *El Lissitzky: Life, Letters, Texts*, 75.

37. In some quotations I provide the German term used by Lissitzky after particularly important words, even when the translation appears straightforward.

38. El Lissitzky, "Demonstrationsräume," in *Die zwangier Jahre in Hanover* (Hannover: Kunstwerein, 1962), 200. Translated as "Exhibition Rooms" in: Lissitzky-Küppers, *El Lissitzky: Life, Letters, Texts*, 366.

39. Lissitzky, "Exhibition Rooms," 366.

40. Lissitzky, "Great Berlin Art Exhibition," 365. "I want to express in [the room] the principles which I consider essential to the fundamental organization of room space in itself. In this already-given room I am attempting to clarify these principles with special regard for the fact that I am designing an exhibition show-room, therefore to my mind a *demonstration room*" [my emphasis].

41. Gough, "Constructivism Disoriented," 89.

42. Lissitzky, "Exhibition Rooms," 367.

43. Gough, "Constructivism Disoriented," 111.

44. "[...] the artist's endeavor to differentiate the exhibited object finds itself inextricably bound up with the problem of parergonality: if each work has as many individuations as backgrounds, the process of its differentiation can never be reduced to the pursuit of that object's supposed, if elusive, autonomy." Gough, "Constructivism Disoriented," 105.

45. Lissitzky, "Exhibition Rooms," 366. We might compare this effect to the kinetic work begun in the 1950s by Venezuelan artist Carlos Cruz Diez.

46. "The opinion has continued to prevail, even up to the present time, that A. is something which is created for all eternity, which must therefore be indestructible, heavy, massive, hewn in granite, cast in bronze." Lissitzky, "A. and Pangeometry," 357.

47. Ernst Lueddeckens, "The 'Abstract Cabinet' of El Lissitzky," *Art Journal* 30, no. 3 (Spring 1971): 265.

48. Benjamin H.D. Buchloh, "From Faktura to Factography," *October* 30 (Fall 1984): 92-94. Buchloh also writes, "The paradox and historical irony of Lissitzky's work was, of course, that it had introduced a revolution of the perceptual apparatus into an otherwise totally unchanged social institution, one that constantly reaffirms both the contemplative behavior and the sanctity of historically rooted works of art," 93.

49. Gough, "Constructivism Disoriented," 90.

50. Lissitzky, "Exhibition Rooms," 366.

51. Lissitzky, "Demonstrationsräume," 200.

52. Lissitzky-Küppers, *El Lissitzky: Life, Letters, Texts*, 176.

53. "Lissitzky's theory of activation is not [...] to be mistaken for a theory of mastery. To be activated [...] is to be disoriented, corporeally undone." Gough, "Constructivism Disoriented," 114.

54. Lissitzky, "Exhibition Rooms," 367 [my italics].

55. Lissitzky-Küppers, *El Lissitzky: Life, Letters, Texts*, 76.

56. Lissitzky, "Exhibition Rooms," 366.

57. Gough, "Constructivism Disoriented," 107.

58. Lissitzky, "Exhibition Rooms," 366.

59. *Ibid.*

60. *Ibid.*

61. El Lissitzky, letter to Sophie Küppers, February 8, 1926; translation in Lissitzky-Küppers, *El Lissitzky: Life, Letters, Texts*, 74.

62. In McCall's words, *Long Film for Ambient Light* consisted of a space in which "a single electric light hung in the center of the room at eye-level. The windows were covered with white paper, limiting them to being light-sources during the day and reflective surfaces during the night (screens)." Anthony McCall, "Two Statements," in *The Avant-Garde Film: A Reader of Theory and Criticism*, ed. P. Adams Sitney (New York: New York University Press, 1978), 250.

63. Walter Gropius, letter to George Rickey, August 1, 1966, in George Rickey ed., *Constructivism* (New York: George Braziller, 1967), 85. Further work on this topic would explore this connection. In fact, that year Lissitzky also published his design from 1920-1921 of an "Electromechanical Show" (*Electromechanische Schau*) of the Futurist opera *Victory over the Sun*. El Lissitzky, "Die plastische Gestaltung der elektro-mechanischen Schau 'Sieg über die Sonne,'" [forward to portfolio] (Hannover: Rob Leunis and Chapman Gmbh, 1923).

64. Lissitzky, "Exhibition Rooms," 366.

65. *Ibid.*, 366.

66. Bruno, *Surface*, 5.

67. *Ibid.*, 25.

68. *Ibid.*, 6.

69. See Marina Warner, *Phantasmagoria: Spirit Visions, Metaphors, and Media into the Twenty-First Century* (Oxford: Oxford University Press, 2008).

70. Erkki Huhtamo, "Watching the Borders and Peeking Beyond: Astronomical Demonstration Instruments as a Challenge for Screenology," *Écranosphère*, no. 1 (Winter 2014), http://www.ecranosphere.ca/article.php?id=18.

71. Erkki Huhtamo, "Elements of Screenology: Toward an Archaeology of the Screen," *Iconics: International Studies of the Modern Image* 7 (2004): 31-82.

72. *Ibid* [my italics].

73. See George Baker, "Film Beyond Its Limits," *Grey Room* 25 (Fall 2006): 92-125; Raymond Bellour, "Of an Other Cinema," in *Art and the Moving Image: A Critical Reader*, ed. Tanya Leighton (London: Tate Publishing, in association with Afterall, 2008), 407; Levi, *Cinema by Other Means*.

74. Baker, "Film Beyond Its Limits," 116.

75. "Vor der irrationalen Fläche hängen nun die Kompositionen Lissitzkys oder Moholys, die erst in dieser schwebenden Atmosphäre das Leben entfalten können, das in ihnen steckt." Sigfried Giedion, "Lebendiges Museum," *Der Cicerone* 21, no. 4 (1929): 105-106. Translation in Lissitzky-Küppers, *El Lissitzky: Life, Letters, Texts*, 282.

76. Alexander Dorner, "Zur abstrakten Malerie: Erklärung zum Raum der Abstrakten in der Hannoverschen Gemäldegalerie," *Die Form: Monatschrift für gestaltende Arbeit* 3, no. 4 (1928): 114. For more on *Stimmungsraum* see Joan Ockman, "The Road Not Taken: Alexander Dorner's Way Beyond Art," in *Autonomy and Ideology: Positioning an Avant-Garde in America*, ed. R.E. Somol (New York: New York University Press, 1997).

77. Noam Elcott, "Rooms of Our Time: László Maholy-Nagy and the Stillbirth of Multi-Media Museums," in *Screen/Space: The Projected Image in Contemporary Art*, ed. Tamara Todd (Manchester: Manchester University Press, 2011), 29.

78. Alexander Dorner, *The Way Beyond "Art"* (New York: New York University Press, 1958), 116.

79. Robbers, "Modern Architecture in the Age of Cinema," 8.

80. I am referring to Andrew V. Urowskie's *Between the Black Box and the White Cube: Expanded Cinema and Postwar Art* (Chicago: University of Chicago Press, 2014). The "Black Box" refers to a kind of theater space with black walls and a flat floor that became widespread in the 1960s and 1970s, as well as the darkened rooms installed in museums and galleries to display moving image works. The "White Cube" refers to a conventional white-walled gallery space, and was theorized by Brian O'Doherty in the influential essay, "Inside the White Cube," published in three parts in *Artforum* in 1976.

But Who Actually Watched Mark Lewis's Films at the Louvre?

1. This essay was originally published in the French journal *Trafic*. See Raymond Bellour, "Mais qui a vu au Louvre les films de Mark Lewis?" *Trafic* 94 (Summer 2015): 43-51.

2. Respectively named Pyramid, 8´ 18´´; Child with a Spinning Top, 4´ 39´´; The Night Gallery, 4´ 50´´; In Search of the Blessed Ranieri, 23´. The Louvre exhibition was held from October 9, 2014 to August 31, 2015.

3. Henri Michaux, "Combat contre l'espace," in *Oeuvres complètes*, vol. 2, ed. Raymond Bellour (Paris: Gallimard, Bibliothèque de la Pléiade, 2001), 310-312.

4. Michael Pisaro, "James Benning, Musician," in *James Benning*, eds. Barbara Pichler and Claudia Slanar (Vienna: Österreichisches Filmmuseum/SYNEMA, 2007), 232-237.

5. *Ibid.*, 237.

6. Élie During, "Turning Movements: Fragments on Mark Lewis," in *Im/possible Films: Mark Lewis* (Geneva: MetisPresses, coll. PLANsécant, 2015), 33-50.

7. *Ibid.*

8. Before using this movie as an example himself, During explains the consequences of the tracking technique when associated with a rotating movement, "it pierces the thickness of things, it splits the image lengthways, in a stubborn movement, indifferent to what it goes through" (*ibid.*, 43).

9. Walter Murch, *In the Blink of an Eye: A Perspective on Film Editing*, 2nd ed. (Los Angeles: Silman-James Press, 2001).

10. A similar disjunction, combining towards the end fixity and movement, appears in Vultures on the Edificio Martinelli (2014, 3′ 38″): a relentless forward motion starts along an external wall of the palace, bordered on the right by a balustrade punctuated with pillars through which one can see small columns on which stands a vulture, immobile. The eye is thus divided between the forced adherence to the movement emphasized by the perspective and the side view of the motif underlined by the title of the video, and even more so when, one by one; the vultures soar, circling in the sky. Until the moment when, arriving on a terrace and discovering a huge cityscape in the distance, the movement stops, the shot only showing the movements of the birds' wings, until the end.

11. See Christa Blümlinger's discussion of one of David Campany's arguments on this topic in *Trafic*: Christa Blümlinger, "Cadrer, cacher, faire apparaître. Projections de Mark Lewis," *Trafic* 94 (Summer 2015): 52-61.

12. Roland Barthes, *La Chambre claire: Note sur la photographie* (Paris: Gallimard, 1980).

13. For example, screened as part of the Orizzonti program at the 2011 Venice Film Festival, Black Mirror at the National Gallery (2011, 8′), in which the machinic device adopted to film painting is, by essence, a challenge to cinema.

14. André Malraux, *The Metamorphosis of the Gods* (New York: Doubleday, 1964).

15. André Bazin, "Peinture et cinéma," in *Qu'est-ce que le cinéma?*, vol. 2 (Paris: Cerf, 1959), 130-131.

Gulliver Goes to the Movies: Screen Size, Scale, and Experiential Impact – A Dialogue

1. Erkki Huhtamo, "Gulliver in Figurine Land," *Mediamatic* 4, no. 3 (1990): 101-105; and "Messages on the Wall. An Archaeology of Public Media Displays," in *Urban Screen Reader*, eds. Scott McQuire, Meredith Martin, and Sabine Niederer (Amsterdam: Institute of Network Cultures, 2009), 15-29. On the other hand, whereas *Gulliver's Travels* was written at a time of great interest in the exploration of the (many) unknown parts of the world, as Francesco Casetti among others pointed out, the media devices typical of our contemporary times have ceased to be tools for the discovery of the world, they merely intercept information that is already floating

about. See Francesco Casetti, "What Is a Screen Nowadays?," in *Public Space, Media Space*, eds. Chris Berry, Janet Harbord, and Rachel Moore (Basingstoke and New York: Palgrave Macmillan, 2013), 16-40, 17.

2. Maxim Gorky, "Last Night I Was in the Kingdom of Shadows." See also his second essay of four days later (1896) in which he deepens the analysis of his viewing experience. See the *Timothy McSweeney website*, accessed September 2015, http://www.mcsweeneys.net/articles/contest-winner-36-black-and-white-and-in-color [my italics].

3. See Tom Gunning, "The Cinema of Attractions. Early Film, Its Spectator and the Avant-Garde," in *Early Cinema. Space, Frame, Narrative*, ed. Thomas Elsaesser (London: British Film Institute, 1990). See also by Gunning "An Aesthetic of Astonishment: Early Film and the (In)Credulous Spectator," in *Viewing Positions. Ways of Seeing Film*, ed. Linda Williams (New Brunswick, NJ: Rutgers University Press, 1994).

4. Crazy as in the "crazy cinématographe," see Martin Loiperdinger, "Crazy Cinématographe. Europäisches Jahrmarktkino 1896-1916," *Edition* Filmmuseum, accessed September 2015, http://www.edition-filmmuseum.com/product_info.php/language/en/info/p49_crazy-cin-matographe–europ-isches-jahrmarktkino-1896-1916.html.

5. Reception examples articulating such an experience of the grotesque are assembled in: Annie van den Oever, "Monstration and the Monstrous. The Grotesque in the Very Beginning and at the Very End," in *Film Theories in Perspective*, eds. F. Casetti, J. Gaines, and V. Re (Udine: Forum, 2010), 229-242.

6. See standard studies such as: Wolfgang Kayser, *The Grotesque in Art and Literature* (New York: Columbia University Press, [1957] 1981); Mikhail Bakhtin, *Rabelais and His World* (Bloomington: Indiana University Press, 1965); Geoffrey Harpham, *On the Grotesque: Strategies of Contradiction in Art and Literature* (Aurora, CO: The Davies Group, [1982] 2007).

7. Noël Carroll, "The Grotesque Today," in *Modern Art and the Grotesque*, ed. Frances S. Connelly (Cambridge: Cambridge University Press, 2003), 293-294; and, A.M.A. van den Oever, "The Medium-Sensitive Experience and the Paradigmatic Experience of the Grotesque, 'Unnatural' or 'Monstrous,'" *Leonardo* 46, no. 1 (2013): 88-89.

8. Susan Stewart, *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection* (Durham and London: Duke University Press, [1993] 2007), 112.

9. Martine Beugnet, "Miniature Pleasures: On Watching Films on an iPhone," in *Cinematicity*, eds. Jeffrey Geiger and Karin Littau (Edinburgh: Edinburgh University Press, 2013), 196-211.

10. The kind of dialectical relationship between miniaturization and technique that Susan Stewart, *op. cit.*, points to still resonates in the context of today's technology: while the development of new technologies has allowed for the miniaturization of data of all kinds, including audio-visual data, the miniature still harks back to traditional forms of craftsmanship celebrated for their capacity to replicate the world in tiny scale as completely as possible, and in the respect of proportions.

11. Here, I partly draw from an earlier publication, "The Aesthetics and Viewing Regimes of Cinema and Television, and Their Dialectics," which was edited by Ian Christie and published in *Audiences* (Amsterdam: Amsterdam University Press, 2012), 113-

127. David Bordwell typically and quite rightly marks the enormous close-ups of "today" as "monstrous." See David Bordwell, *Poetics of Cinema* (New York and London: Routledge, 2008), 302. On the close-up and scale, see Mary Ann Doane, "The Close-Up: Scale and Detail in the Cinema," *differences: A Journal of Feminist Cultural Studies* 14, no. 3 (2003): 89-111.

12. See Francesca Garbarini and Mauro Adenzato, "At the Root of Embodied Cognition: Cognitive Science Meets Neurophysiology," *Brain and Cognition* 56 (2004): 102-103.

13. Laura Mulvey presents an illuminative analysis of the uncanny and disruptive aspects of such a viewing experience in the dialogue with Annie van den Oever, "Conversation with Laura Mulvey," in *Ostrannenie*, ed. Annie van den Oever (Amsterdam: Amsterdam University Press, 2010), 185-203.

14. For a discussion of the family relations between these emotional responses, see: Carroll, "The Grotesque Today," 293-294.

15. For an interesting analysis of the close-ups in Grandma's Reading Glass (1900) see: William D. Routt, "Demolishing a Wall," *Senses of Cinema*, no. 14 (June 2001), accessed June 7, 2011, http://www.sensesofcinema.com/2001/feature-articles/demolishing_a_wall/.

16. "On the screen and only on the screen, a cockroach is worth one hundred elephants." Sergei Eisenstein dedicated many pages to the close-up [Grossaufnahme] in his *Memoiren*; the German two-volume edition is far more elaborate than the English one: *Yo, ich selbst: Memoiren* (Berlin: Henschelverlag, 1987). For a comment on Eisenstein and the close-up, see: Doane, "The Close-Up," 89-111.

17. Carroll, "The Grotesque Today," 297, 306-307.

18. See Dawn Ades and Simon Baker, *Close-Up. Proximity and Defamiliarisation in Art, Film, and Photography* (Edinburgh: The Fruitmarket Gallery, 2008).

19. Some cognitive theorists claim that new technologies aim at perfecting natural perception (the "naturalization hypothesis"). The notion of "natural audiences" was developed by David Bordwell in his chapter on the "Viewer" in *Narration in the Fiction Film* (Madison: University of Wisconsin Press, 1985). For viewers who are familiar with a certain historical viewing practice and use their (automatized) viewing routines when watching a movie, it may be argued that as part of their routines they use fully automatized (cognitive) "templates" and "schemes" which have become second nature due to automatization. Bordwell conceptualized "natural" and historical viewers and viewing routines as part of his "historical poetics," which he developed (following Eisenstein) to reconstruct the historical formats, systems, and effects in close relation to the historical audiences and viewing practices. See David Bordwell, "Historical Poetics of Cinema," in *The Cinematic Text: Methods and Approaches*, ed. R. Barton Palmer (New York: AMS Press, 1989), 369-392, http://davidbordwell.net/articles/Bordwell_Cinematic%20Text_no3_1989_369.pdf.

20. John Ellis, "Cinema and Television: Laios and Oedipus," in *Cinema Futures: Cain, Abel or Cable? The Screen Arts in the Digital Age*, eds. Thomas Elsaesser and Kay Hoffmann (Amsterdam: Amsterdam University Press, 1998), 127-136.

21. Beugnet, "Miniature Pleasures," 206. See also: Martine Beugnet, "Uncanny Encounter: The iPhone and the Debrie Camera," in *Exposing the Film Apparatus: The*

Film Archive as a Research Lab, eds. Giovanna Fossati and Annie van den Oever (Amsterdam: Amsterdam University Press, 2016).

22. "Petite Poucette" is the feminine version of Tom Thumb (or Petit Poucet) in French. Michel Serres, *Petite Poucette* (Paris: Le Pommier, 2012).

23. As Gaston Bachelard and Susan Stewart, *op. cit.*, 68-69, remind us, miniaturization belongs, primarily to the land of fairy tales, and is never far from the world of children and their toys. See Gaston Bachelard, *La poétique de l'espace* (Paris: Presses Universitaires de France, 1958), 153.

24. Francesco Casetti and Sara Sampietro, "With Eyes, With hands: The Relocation of Cinema Into the iPhone," in *Moving Data: The iPhone and the Future of Media*, eds. Pelle Snickars and Patrick Vonderau (New York: Columbia University press, 2012), 27.

25. "The audience is growing rapidly – even if this trend is slower in the West than in the Far East, particularly India, Japan and China – to the point that one could describe the mobile as 'the fourth screen' (after the cinema, television and the computer screens)" [...] "the mobile serving merely as an external extension of the domestic receiver, in the 'non-places' (Marc Augé) and dead times of life." Roger Odin, "Spectator, Film and the Mobile Phone," in *Audiences*, ed. Ian Christie (Amsterdam: Amsterdam University Press, 2012), 155-169, 158.

26. Juliana Pierce, "The Fourth Screen," *Off the Air: Screenright's Newsletter*, August 2005, 4, cited in Odin, *Ibid.*, 158.

27. On this topic, see Vivian Sobchack's "Nostalgia for a Digital Object: Regrets on the Quickening of Quicktime," *Millennium Film Journal* 34 (1999): 4-23. See also Lev Manovich, "Little Movies," *manovich.net*, http://manovich.net/index.php/exhibitions/little-movies-rhizome.

28. The film also includes brief sequences of digitized footage from older, black-and-white analog films.

29. Talking about the variety of haptic images that encourage us to exercise our haptic or tactile gaze, Laura U. Marks mentions "traditions that involve intimate, detailed images that invite a small, caressing gaze." See Laura Marks, *The Skin of the Film: Intercultural Cinema, Embodiment, and the Senses* (Durham and London: Duke University Press, 2000), 169, and Beugnet, "Miniature Pleasures," 206.

30. Tanner talks of "une remontée de la matière": "Interview with Alain Tanner," *Dans la ville blanche*, DVD bonus, directed by Alain Tanner (Paris: Mk2 edition, 2007).

31. Tom Gunning, "Re-Newing Old Technologies: Astonishment, Second Nature, and the Uncanny in Technology from the Previous Turn-of-the-Century," in *Rethinking Media Change: The Aesthetics of Transition*, eds. David Thourburn and Henry Jenkins (Cambridge, MA: MIT Press, 2003), 47.

32. See Ian Garwood, *The Sense of Film Narration* (Edinburgh: Edinburgh University Press, 2013).

The Skin and the Screen – A Dialogue

1. Laura U. Marks, *The Skin of the Film: Intercultural Cinema, Embodiment, and the Senses* (Durham and London: Duke University Press, 2000), xi.

2. *Ibid.*
3. Laura U. Marks, *Touch: Sensuous Theory and Multisensory Media* (Minneapolis and London: University Minnesota Press, 2002).
4. Vivian Sobchack, *The Address of the Eye: A Phenomenology of Film Experience* (Princeton, NJ: Princeton University Press, 1992).
5. Antonia Lant, "Haptical Cinema," *October* 74 (Fall 1995): 45-73.
6. Marks, *Touch*, 9.
7. Marks, *The Skin of the Film*, 176.
8. *Ibid.*
9. Hito Steyerl, *E-Flux Journal: The Wretched of the Screen*, foreword by Franco "Bifo" Berardi, eds. Julieta Aranda, Brian Kuan Wood, and Anton Vidokle (Berlin: Sternberg Press, 2012), http://indexofpotential.net/uploads/46385/Steyerl,%20Hito%20-%20The%20Wretched%20of%20the%20Screen.pdf.
10. Arild Fetveit, "The Precarious Aesthetic, Hot Media and the Sublime" (paper presented at the Film-Philosophy Conference: Beyond Film, the Amsterdam School for Cultural Analysis (ASCA) and EYE Film Institute Netherlands, Amsterdam, July 10-12, 2013), http://www.film-philosophy.com/conference/public/conferences/2/schedConfs/6/program-en_US.pdf.
11. Marks, *The Skin of the Film*, 152-153.
12. Ratiba Hadj-Moussa, *La télévision par satellite au Maghreb: Espaces de résistance, espaces critiques* (Grenoble: Presses Universitaires de Grenoble, 2015).
13. Philippe Azoury et al., *Album cinémathèque de Tanger*, eds. Omar Berrada and Yto Barrada (Tanger: Librairie des Colonnes / Barcelona: La Virreina Centre de la Image, 2011).
14. Laura U. Marks, *Enfoldment and Infinity: An Islamic Genealogy of New Media Art* (Cambridge, MA: MIT Press, 2010).
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Emmanuele Toddi, a pseudonym of Pietro Silvio Rivetta (1886-1952), was a versatile figure – an Italian writer, journalist, illustrator, orientalist, radio broadcaster,

and filmmaker. He graduated in law and began his career as a journalist in Rome in 1906. As he knew 14 languages, including Chinese and Japanese, and was passionate about oriental culture, he was appointed Professor of Japanese and Chinese language and culture at the Regio Instituto Universitario Orientale in Naples and often acted as an intermediary between the Italian and Japanese governments. His interest in movies began in July 1916 when he created advertising designs for Lucio D'Ambra's I Re, le Torri, gli Alfieri and wrote some film reviews in the film magazine *Apollon.* In 1920, he began making movies and started his own production company, Selecta, in Rome, in 1922. Using the name Toddi, he wrote, directed, and produced a dozen movies, most of which were comedies. Between 1941-1943, he was the co-editor of the Italian-Japanese monthly, *Yamato*.

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